

Exhibit 2

Final Preliminary

Assessment Report For

Perfluorinated Compounds

at Cannon AFB

**FINAL
PRELIMINARY ASSESSMENT REPORT
FOR PERFLUORINATED COMPOUNDS
AT
CANNON AIR FORCE BASE, NEW MEXICO**

Prepared for:



**Air Force Civil Engineer Center
2261 Hughes Avenue, Suite 155
Lackland AFB, Texas 78236-9853**

**Contract No. FA8903-08-D-8772
Task Order 0065
CDRL A001A**

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October 2015

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REPORT DOCUMENTATION PAGE		Form Approved QMB No. 0704-0188	
<p>Public reporting for this collection of information is estimated to average 1 hour per response, including the time for reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1024, Arlington, VA 22202B1302, and to the Office of Management and Budget, Paperwork Reduction Project (0704B0188), Washington, DC 20503.</p>			
1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED FINAL	
	October 2015		
4. TITLE AND SUBTITLE		4. FUNDING NUMBERS	
Preliminary Assessment Report for Perfluorinated Compounds at Cannon Air Force Base, New Mexico		Contract No. FA8903-08-D-8772 Task Order No. 0065	
6. AUTHOR(S)			
HydroGeoLogic, Inc.			
7. PERFORMANCE ORGANIZATION NAMES(S) AND ADDRESS(S)		8. PERFORMANCE ORGANIZATION REPORT NUMBER	
HydroGeoLogic, Inc. 404 East Ramsey Road, Suite 210 San Antonio, Texas 78216		AF5065	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(S)		10. SPONSORING/MONITORING AGENCY REPORT NUMBER	
AFCEC/EXEW 2261 Hughes Avenue, Suite 155 Lackland AFB, Texas 78236-9853		A001A	
11. SUPPLEMENTARY NOTES			
12a. DISTRIBUTION/AVAILABILITY STATEMENT Unlimited		12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words)			
<p>This is a Preliminary Assessment Report of sites or locations at Cannon Air Force Base where perfluorinated compounds may have been released to the environment through the use or discharge of aqueous film forming foam.</p>			
14. SUBJECT TERMS		15. NUMBER OF PAGES	
		16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE.	19. SECURITY CLASSIFICATION OF ABSTRACT.	20. LIMITATION OF ABSTRACT.
Unclassified	Unclassified	Unclassified	Unlimited

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LIST OF ACRONYMS AND ABBREVIATIONS

AFB	Air Force Base
FFF	aqueous film forming foam
Air Force	U.S. Air Force
AST	above ground storage tank
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
ERP	Environmental Restoration Program
EPA	Environmental Protection Agency
FTA	Fire Training Area
HEF	high expansion foam
HGL	HydroGeoLogic, Inc.
OWS	oil water separator
PA	Preliminary Assessment
PFOA	perfluorooctanoic acid
PFOS	perfluorooctane sulfonate
PFCs	Perfluorinated Compounds
PWS	public water system
RCRA	Resource Conservation and Recovery Act
SWMU	Solid Waste Management Unit
TPH	total petroleum hydrocarbons
WWTP	wastewater treatment plant

**FINAL
PRELIMINARY ASSESSMENT REPORT
FOR PERFLUORINATED COMPOUNDS
CANNON AIR FORCE BASE, NEW MEXICO**

1.0 INTRODUCTION

HydroGeoLogic, Inc. (HGL) has been contracted by the Air Force Civil Engineer Center to perform preliminary assessment (PA) activities at multiple U.S. Air Force (Air Force) and Air National Guard Fire Training Areas (FTAs) and Non-FTAs to determine locations of potential environmental release of perfluorinated compounds (PFCs). Specifically, the HGL Team is to complete PA activities to determine potential releases of PFCs at 82 Air Force and Air National Guard installations from FTAs and other known and suspected releases of PFCs from Aqueous Film Forming Foam (AFFF) usage or storage areas. The work is being performed by HGL under the existing 4P Architecture and Engineering contract, Contract No. FA8903-08-D-8772, Task Order 0065.

HGL conducted activities associated with this PA at Cannon Air Force Base (AFB) during the week of July 5, 2015, in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 Preliminary Assessment processes. Cannon AFB is an active military installation located in Curry County, New Mexico, as presented in Figure 1.1.

Cannon AFB dates to 1929 when Portair Field was established as a civilian passenger terminal. In 1942, the Army Air Corps took control of the civilian airfield and it became known as the Clovis Army Air Base. In early 1945, the base was renamed Clovis Army Air Field, where flying, bombing, and gunnery classes continued until the base was deactivated in May 1947. The base was reassigned to the Tactical Air Command and formally reactivated as Clovis AFB in 1951. It was renamed Cannon AFB in 1957. Several Fighter-Bomber Groups and Tactical Fighter Wings have occupied the Base since 1951 (Cannon AFB, 2005).

1.1 BACKGROUND

PFCs are compounds used in the formulation of AFFF, which the Air Force has used in fire training exercises, suppressing aircraft and other vehicle fires, and in aircraft hangar fire suppression systems. Although PFCs are not regulated under CERCLA or the Resource Conservation and Recovery Act (RCRA), there is evidence that perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA), which can be found in the environment following AFFF release, may present potential, non-carcinogenic risks to human health and the environment (Chang et al., 2014; Porter, 2011; Rak et al., 2009).

Several federal government documents confirm the initial use of AFFF by the Air Force beginning in 1970:

- MILSpec for AFFF (MIL-F-24385) formally issued in 1969.

- General Accounting Office determination on sole source award protest to provide AFFF to the Navy in December 1969.
- A History of Fire Protection Training at Chanute AFB, 1964-1976 (Coates, 1977).

Based on Air Force performance testing results on AFFF, the Air Force Director of Civil Engineering, M.G. Goddard, in 1970 issued authorization for the Air Force to procure AFFF. No usage within the Air Force is documented or suspected prior to 1970.

1.2 PURPOSE AND OBJECTIVES

The purpose and objective of this PA report is to identify locations at Cannon AFB where PFCs may have been released to the environment and to conduct an initial assessment of possible migration pathways and receptors of potential contamination.

This PA report documents the known FTAs, as well as additional locations (non-FTAs) where AFFF may have been released into the environment at Cannon AFB (Table 1.1). Locations that are considered non-FTAs include but are not limited to hangars, fire stations, emergency response areas and any other locations where the potential exists for AFFF to have been released into the environment. This PA report also differentiates locations that pose little or no potential threat to human health and the environment from locations that warrant further investigation.

Table 1.1
FTAs and Non-FTAs Identified for Potential AFFF Releases

Fire Training Areas	
Former FTA No. 1 (FT-06)	
Former FTA No. 2 (FT-07)	
Former FTA No. 3 (FT-08)	
Former FTA No. 4 (FTA-4)	
Active FTA	
Non-Fire Training Areas	
Hangars	
Hangar 109	
Hangar 119	
Hangar 125	
Hangar 126	
Hangar 133	
Hangar 197	
Hangar 199	
Hangar 204	
Hangar 208	
Fire Stations	
Current Fire Station	
Former Fire Station	
Other	
Former Sewage Lagoons	
North Playa Lake Outfall	
South Playa Lake Outfall	
Whispering Winds Golf Course Outfall	

1.3 BASEWIDE ENVIRONMENTAL SETTING

1.3.1 Geology

Cannon AFB is located in eastern New Mexico approximately seven miles west of the city of Clovis, New Mexico, just south of U.S. Highway 60-84. The majority of the land surrounding Cannon AFB is productive, irrigated farmland or grassland. The base is situated in the Southern High Plains Physiographic Province near the center of the Llano Estacado sub province. This area is a nearly flat plain sloping gently (10 to 15 feet per mile) to the east and southeast. In the vicinity of Cannon AFB, elevations range from 4,250 to 4,350 feet above mean sea level (AECOM, 2011).

The most prominent geomorphic features in the vicinity of Cannon AFB are broad, widely spaced valleys and shallow depressions called “playas.” Playas are wide-spread across the area and may originate from collapse at the surface due to dissolution-induced subsidence of underlying Permian evaporite-bearing strata or due to leaching and wind deflation. During periods of rainfall, runoff collects in the playas to form ephemeral lakes. Playas have no external surface drainage. Water is lost by infiltration to the soil and evaporation. Without recharge, water in playa lakes persists for only a few days or weeks (AECOM, 2011).

The near-surface stratigraphic units of interest at Cannon AFB are the Ogallala Formation of late Miocene to late Pliocene age and the Early Triassic Dockum Group. The Dockum Group consists of three formations. The stratigraphically lowest unit is the Santa Rosa Sandstone. Overlying the Santa Rosa Sandstone are the Chinle and Redonda Formations. The Chinle and Redonda Formations are composed mainly of red shales with lesser interbedded sands and are known locally as “redbeds.” The top of the Dockum Group is marked by an erosional nonconformity having relief of up to several hundred feet (AECOM, 2011).

Overlying the Dockum Group redbeds is the Ogallala Formation. The Ogallala Formation extends from eastern New Mexico and Colorado into Texas, Oklahoma, Kansas, Nebraska, and South Dakota. Drillers’ logs from Cannon AFB indicate that the Ogallala Formation varies in thickness from 360 feet to 415 feet. The incised upper surface of Triassic redbeds strongly influences Ogallala thickness. Paleo valleys in the post-Triassic nonconformity are deep and trend dominantly east to west. Ogallala thickness may thus vary significantly over short north-to-south distances (AECOM, 2011).

The Ogallala Formation is erosionally truncated to the south along the abandoned Portales Valley, to the west along the Pecos River Valley, and to the north in a series of ephemeral stream valleys. The Ogallala Formation extends more than 125 miles east before terminating as an escarpment in Briscoe County, Texas. Springs and seeps are common along the erosional margins of the Ogallala Formation (AECOM, 2011).

The Ogallala Formation dips gently and monoclinally to the southeast in the vicinity of Cannon AFB. Data suggest that some quaternary warping may have occurred; however, most of these structures are located well to the northwest and southwest of Cannon AFB. No faults or buried structural lineaments are known to exist in the vicinity of Cannon AFB (AECOM, 2011).

The Ogallala Formation is composed of unconsolidated, poorly sorted gravel, sand, silts, and clays. The base of the Ogallala Formation is generally marked by a gravel, cobble, and boulder deposit. This basal member contains sediments derived from igneous and sedimentary rocks transported from the mountains to the west. The Ogallala Formation was laid down as stream and overbank deposits formed within coalescing alluvial fans. These fans form a broad pediment along the eastern flank of the Rocky Mountains. As is typical of alluvial deposits, the internal stratigraphy of the Ogallala Formation varies vertically and horizontally over short distances (AECOM, 2011).

Except where strongly cemented by calcium carbonate (caliche), the sediments of the Ogallala Formation are loose and friable. Authigenic and allogenic clays are found as a trace to abundant matrix mineral. Five zones have been distinguished within the Ogallala Formation of east-central New Mexico on the basis of clay minerals. Smectites (montmorillonites) and attapulgite (with sepeotite) are the dominant clays throughout the Ogallala. Illite is a lesser but persistent clay, as is kaolinite. Smectite is a swelling clay, causing deep cracks to form in dry surface soils. Smectite in particular and, to a lesser extent, attapulgite and illite, are clays with moderate to high cation exchange capacities. The formation as a whole should, therefore, have a relatively high cation exchange capacity, which should inhibit the migration of charged contaminants and especially ionic forms of metals (AECOM, 2011).

The Blackwater Draw Formation of Quaternary age generally overlies the Ogallala Formation at Cannon AFB and is composed mostly of aeolian sand deposits. It ranges in thickness from zero to 80 feet in eastern New Mexico and is estimated to range from zero to 25 feet thick at Cannon AFB. A caliche layer is typically present in the unsaturated zone of the Blackwater or Ogallala Formations in New Mexico. Geologic logs recorded at the Base indicate that caliche occurs as shallow as two feet below land surface and is up to 54 feet in thickness. Caliche occurs as numerous nearly continuous to discontinuous layers throughout the Ogallala Formation, but may be thin or absent below playas. Caliche forms as calcium carbonate which is leached from overlying sediments and precipitates in the pore space of the host sediments due to the evaporation of downward percolating water. The upper caliche layer that crops out around playas is typically three to five feet thick. Caliches which occur lower in the Ogallala are platy and harder than the upper caliche layer (AECOM, 2011).

Precipitation is caused by the evaporation of downward percolating water. The caliche may thus mark the position of ancient vadose zones. Radiocarbon dates for the upper “climax” caliche range from approximately 27,000 years Before Present to approximately 42,000 years Before Present (AECOM, 2011).

Caliche is relatively soluble in acidic water (water with a pH less than 7) or in waters containing dissolved carbon dioxide. The top surface of the uppermost or “climax” caliche in a fresh outcrop typically shows solution etching. The “climax” caliche is pisolithic (that is, consisting of spherical concentrically laminated aggregates one to ten millimeters). The pisolithes are thought to have formed as the caliche was repeatedly chemically weathered and brecciated during Pleistocene pluvials (wet climate episodes) and later recemented during drier intervals. This upper caliche crops out around playas and the bounding escarpments of the Ogallala Formation, and is locally termed “caprock.” The “climax” caliche is typically three to five feet thick. Caliches that occur

lower in the Ogallala Formation are platy and harder. Caliche may be thin or absent below playas (AECOM, 2011).

1.3.2 Hydrogeologic Setting

The subsurface geology at Cannon AFB includes the Permian (undifferentiated), Chinle, Ogallala, and Blackwater Draw Formations. The Permian Formation consists predominantly of red shale, siltstone, sandstone, gypsum, anhydrite, dolomite, bedded salt, and local limestone beds. Dissolution of more soluble beds, such as salt or anhydrite, may be responsible for playa formation. The Chinle Formation, referred to as Triassic red beds due to their color and geologic age, represent the greatest depth penetrated by wells in the Cannon AFB vicinity; therefore, the formation thickness in the vicinity of Cannon AFB is not known. The thickness of the Chinle Formation ranges from zero to 400 feet in eastern New Mexico. The Chinle Formation dips to the east and consists mostly of clay with some intermixed sand and silt. In the area of Cannon AFB, the Ogallala Formation unconformably overlies the Chinle Formation (AECOM, 2011).

The Blackwater Draw Formation and upper part of the Ogallala Formation are not saturated at Cannon AFB. The lower portion of the Ogallala Formation is the primary regional aquifer for both potable and irrigation water. Water quality is generally good, with hardness and fluorides being somewhat high. No deeper aquifers are utilized for groundwater production in the vicinity of Cannon AFB. The Ogallala Aquifer is part of the Southern High Plains Aquifer that extends across parts of southeast New Mexico and northwest Texas, which in turn is part of the larger High Plains Aquifer that extends continuously from Wyoming and South Dakota into New Mexico and Texas. Cannon AFB is underlain by the portion of the aquifer designated the Curry County Underground Water Basin. The Ogallala is a water table, or unconfined aquifer with the underlying Chinle redbeds serving as the basal confining layer in eastern New Mexico. Well yields vary from less than one gallon per minute in thin silts and sands to as much as 1,600 gallons per minute in thick sands and gravels (AECOM, 2011).

The Ogallala Aquifer has a southeasterly regional hydraulic gradient of approximately 17 feet per mile and a similar local southeasterly hydraulic gradient of approximately 0.003 meters per meter. The general direction of groundwater flow in the Cannon AFB area is from northwest to southeast, but some localized changes have occurred due to the decline in water levels in the Southern High Plains Aquifer. Groundwater elevation data from October 2008 indicate the continuing decline in groundwater levels is due to the withdrawal of groundwater from the Ogallala Aquifer by pumping for agricultural use (AECOM, 2011).

At Cannon AFB, the depth to groundwater is approximately 300 feet. Saturated thickness ranged from 93 to 143 feet in 1990 and continues to decrease. Between 1937 and 1978, groundwater levels declined approximately 23 to 24 feet in the vicinity of Cannon AFB. Between 1994 and 2005, groundwater elevation changes of as much as 32.6 feet were measured, with an average decline of approximately 12 feet across the Base. Measurements taken in 2008 indicate that groundwater elevations have declined on average an additional 9.5 feet since 2005. Thus, saturated thickness is continuing to decline at a rate of over 2 feet per year (AECOM, 2011).

Cannon AFB is located within a semiarid region where the average precipitation (approximately 17.9 inches per year in Clovis) is much less than the evaporation (110 inches per year). While

recharge to the Southern High Plains Aquifer has been estimated to range from 0.01 to 1.71 inches per year, most estimates are less than 1 inch per year. An investigation of chloride concentrations and moisture content of soil at Cannon AFB indicated that most recharge occurs through areas of focused recharge, such as playas and stormwater detention areas, and that interplaya areas contribute little recharge. Caliche inhibits the downward percolation of moisture and provides evidence that evaporation exceeds precipitation and percolation does not reach the water table in many areas of the Base (AECOM, 2011).

1.3.3 Hydrologic Setting

Surface water streams are non-existent in the Cannon AFB vicinity. Running Water Draw, located approximately ten miles north of the Base, is the nearest drainage feature and it is dry most of the time. Stream drainage of the plateau is very poorly developed because of the low annual rainfall and lack of relief. Drainage patterns generally consist of long, shallow valleys with almost no tributaries, such as Running Water Draw. These valleys, sloping to the east and southeast, eventually enter the valley of one of three major rivers: the Red, Brazos, and Colorado Rivers. However, the Southern High Plains area does not generally contribute to stream flow except during rare periods of excessive rainfall. Water is lost to evapotranspiration and shallow infiltration before it has a chance to run off (HARZA, 1997a; AECOM, 2011).

Historically, surface runoff at Cannon AFB drained into four natural, ephemeral playas. The two northern playas were converted into plastic-lined golf course ponds. The southern playa, known as South Playa Lake (Section 3.4.3) occupies approximately nine acres south of the intersection of the main jet runways and is approximately 15 feet deep. Since 1943, stormwater runoff from the flightline has collected in this playa where it either evaporates or percolates into the soil. The northern playa, known as North Playa Lake (Section 3.4.2), was bermed on the north, west, and south sides with topsoil and concrete debris. It covers approximately 13 acres and received treated effluent from the former sewage lagoons (Section 3.4.1) (AECOM, 2011).

1.3.4 Ecological Receptors

Ecological receptors include any living organisms other than humans, the habitat that supports such organisms or natural resources that could be adversely affected by environmental contaminations resulting by a release at or migration from an identified location.

There are no permanent surface water features on Cannon AFB other than two playa lakes that receive wastewater effluent (North Playa Lake) and stormwater runoff (South Playa Lake). The base's golf course also contains an irrigation pond that is filled using wastewater effluent. These water bodies are not known to be used by base personnel or local residents for recreational purposes (HARZA, 1997a).

No sensitive environments surround Cannon AFB. However, the diversity of plants and animal species that inhabit nearby wildlife areas are also considered ecological receptors. Table 1.2 lists the endangered species with the potential to exist at nearby wildlife areas (EDR, 2015a).

Table 1.2
Endangered Species

BIRD
Bald Eagle
MAMMAL
Black-footed Ferret

In addition, wetland areas have been identified adjacent to the surface water migration paths 15 miles downstream of the Base.

1.4 PRELIMINARY ASSESSMENT METHODS

The performance of this PA included:

- Reviewing information and reports in the Administrative Record.
- Reviewing documents related to Air Force use of AFFF.
- Conducting a PA visit at Cannon AFB.
- Conducting interviews with base environmental management personnel, Cannon AFB Fire Department personnel, and aircraft hangar maintenance and operations personnel.
- Photographing locations where AFFF has been used.
- Performing environmental data records searches to document nearby populations, water supply well information, and wetlands.

If the operational history of an identified location indicates that AFFF was not used, then no exposure pathway could exist and the pathway and environmental hazard assessments within the PA will not be applicable.

1.5 REPORT ORGANIZATION

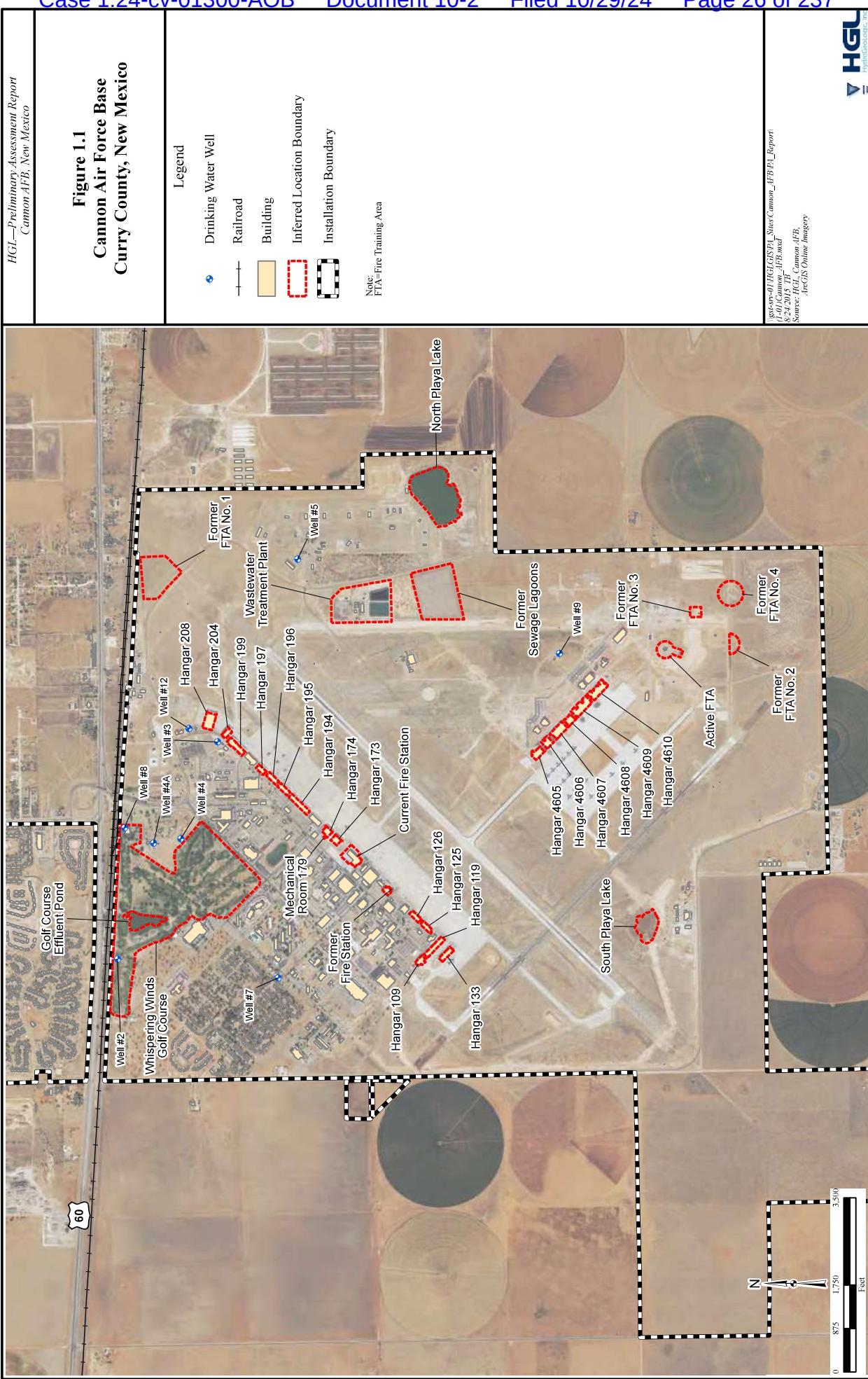
This PA report is organized as follows:

- Section 1.0, Introduction, provides a project overview, provides a basewide environmental setting, and describes the methods used to conduct the PA.
- Section 2.0, Fire Training Areas, describes the FTAs identified during the PA visit.
- Section 3.0, Non-Fire Training Areas, describes the non-FTAs identified during the PA visit.
- Section 4.0, Summary and Conclusions, summarizes and provides conclusions for both FTAs and non-FTAs.
- Section 5.0, References, provides references consulted during the preparation of this PA report.
- Appendix A, Photo Documentation, provides photos taken during the PA visit.
- Appendix B, Field Documentation, provides the Potential Hazardous Waste Site Preliminary Assessment Forms.
- Appendix C, Records of Communications, provides records of all communications during the PA visit.

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FIGURE

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2.0 FIRE TRAINING AREAS

2.1 FORMER FIRE TRAINING AREA NO. 1 (FT-06)

2.1.1 Description and Operational History

FTA No. 1 is located in the northeast corner of the base and was used from approximately 1959 to 1968. This former FTA is currently referenced as site FT-06 under the Environmental Restoration Program (ERP). FT-06 is bordered to the north by the installation boundary and on all other sides by sparsely vegetated land (Figure 2.1). The geographic coordinates of FT-06 are 34°24'8.27"N Latitude and 103°18'10.88"W Longitude.

FT-06 comprised an unlined surface approximately 100 feet in diameter. Approximately 300 gallons of waste oils, fuels, and spent solvents were burned on the ground at this former FTA to provide practical fire training experience. Wastes were brought to the site in 55-gallon drums. Training exercises were conducted here approximately twice per month. Prior to the initiation of some exercises, the ground was reportedly pre-saturated with water; however, some residual quantities of the waste liquids may have percolated into the subsurface. Currently, the area is defined by abundant aluminum slag and slightly stressed vegetation (CH2M Hill, 1983; Radian, 1986; Cannon AFB, 2007; Cannon AFB, 2014a).

The Fire Inspector was not aware of any use of AFFF at FT-06 and no records were found to indicate that AFFF was ever used or stored at this FTA. The FTA ceased operations before initial use of AFFF by the Air Force in 1970 (Appendix C; Records of Communication). As such, there was no evidence of a release of AFFF to the environment at the time of the assessment.

2.1.2 Waste Characteristics

Not Applicable.

2.1.3 Pathway and Environmental Hazard Assessment

Not Applicable.

2.1.3.1 Groundwater Pathway

Not Applicable.

2.1.3.2 Surface Water Pathway

Not Applicable.

2.1.3.3 Soil and Air Exposure Pathways

Not Applicable.

2.2 FORMER FIRE TRAINING AREA NO. 2 (FT-07)

2.2.1 Description and Operational History

FTA No. 2 was used from approximately 1968 to 1974 to provide base personnel with practical experience in extinguishing fires. This former FTA is currently referenced as site FT-07 under the ERP. FT-07 is surrounded by sparsely vegetated land on all sides (Figure 2.2). The geographic coordinates of FT-07 are 34°22'13.05"N Latitude and 103°18'31.18"W Longitude.

FT-07 is located in the southeast corner of the base adjacent to the abandoned runway and is recognizable as a semi-circular, sparsely vegetated area (Figure 1.1). During its operational period, the area consisted of two round depressions in the land surface, each measuring approximately 100 feet in diameter. Unused JP-4 was the only fuel burned at this site, with approximately 300 gallons used per exercise. Exercises were conducted approximately twice per quarter at FT-07. Before each training exercise, the ground was pre-soaked with water to minimize infiltration of any residual fuel (CH2M Hill, 1983; Radian, 1986; Cannon AFB, 2007; Cannon AFB, 2014a).

In 1986, a Phase II investigation was completed at FT-07, and oil, grease, and lead were detected in soil samples. During a remedial investigation conducted in 1992, benzene, toluene, ethylbenzene and total xylenes and total petroleum hydrocarbons (TPH) were detected in surface soil samples. In October 2006, the New Mexico Environment Department issued a recommendation for no further action at FT-07 (Radian, 1986; Cannon AFB, 2007; Cannon AFB, 2014a).

The Fire Inspector was not aware of any specific use of AFFF at FT-07. However, he mentioned that it was possible that AFFF was used at FT-07 because it operated after initial use of AFFF by the Air Force in 1970 (Appendix C, Records of Communication). According to an August 1983 ERP Records Search, since approximately 1970, FTA procedures at Cannon AFB have been to “presaturate the ground surface with water, apply the starter fuel, ignite, preburn for 30 to 45 seconds, and extinguish with AFFF.” The quantity of AFFF that may have been used at FT-07 is unknown (CH2M Hill, 1983).

Because the round depressions at FT-07 were unlined, any substance used there would have permeated into the soil, as evidenced by the detections of oil, grease, lead, benzene, toluene, ethylbenzene and total xylenes, and total TPH in previous environmental investigations. As such, there is a high probability that AFFF was released to the environment at FT-07.

2.2.2 Waste Characteristics

There are no records documenting the exact amount or frequency of AFFF use at FT-07 from approximately 1970 to 1974. There was no lining or other containment in place at FT-07 (Appendix C, Records of Communication; CH2M Hill, 1983). As such, any AFFF used there would have permeated the soil and been released to the environment.

Several investigations and remedial actions have occurred at FT-07, but none have focused on AFFF or PFCs.

2.2.3 Pathway and Environmental Hazard Assessment

A complete exposure pathway typically includes the following components: a source of contamination (an environmental medium contaminated at the source or a release mechanism by which chemicals are released from a source medium and transported), an exposure medium by which a receptor comes into contact, and a route of intake for the contaminant into the receptor's body at the exposure point. If any of these elements are missing, the pathway is incomplete. Other release mechanisms resulting in exposure media for receptors may include the uptake of soil contaminants by plants and animals and the emission of soil contaminants into the air in association with dust particles (USEPA, 1989).

2.2.3.1 Groundwater Pathway

The basewide geologic and hydrogeologic settings, including groundwater flow, are provided in Section 1.3. The potential exists for PFC groundwater contamination at the former FTA as a result of historical practices using AFFF from 1970 to 1974.

The primary drinking water source for Cannon AFB is groundwater extracted from the Ogallala Aquifer using seven wells located on base property. The water is disinfected with chlorine and distributed via water towers and underground pipes. The base's water system is registered as public water supply (PWS) ID NM3567905 and serves a population of approximately 9,284 (EDR, 2015c; Cannon AFB, 2014b).

The combined on- and off-base population within a 4-mile radius from FT-07 is approximately 6,540 residents (EDR, 2015a). The closest active drinking water well is Well #5 located approximately 1.7 miles northeast (NMED, 2015). There are no residential areas located downgradient of FT-07, as the land is used mainly for agricultural purposes. The nearest residential area is on base approximately two miles northwest of FT-07.

2.2.3.2 Surface Water Pathway

The land surface at FT-07 slopes south from the abandoned runway into two small depressions. All drainage is internal within FT-07 and there are no surface water drainages in its vicinity. Therefore, the surface water pathway is considered incomplete. There are no water bodies adjacent to FT-07 and the area is not located within a floodplain (EDR, 2015a; Geo Fin, 2015).

2.2.3.3 Soil and Air Exposure Pathways

FT-07 is a former FTA and is no longer used by the Cannon AFB Fire Department. The area is restricted to authorized personnel only and there are no on-site workers or residents. The closest residential area is approximately two miles northwest of FT-07. Population details of the residential areas within a 4-mile radius are discussed in Section 2.2.3.1. The potential of exposure to burrowing animals would be present.

There are no schools or daycare facilities within a 200-foot radius of FT-07. The closest school is Bella Vista Elementary School located approximately 4.75 miles northeast of FT-07 in Clovis,

New Mexico (EDR, 2015b). The closest daycare facility is a Child Development Center located on base in Building 1435, approximately 2.1 miles northwest of FT-07.

2.3 FORMER FIRE TRAINING AREA NO. 3 (FT-08)

2.3.1 Description and Operational History

FTA No. 3 was used from approximately 1968 to 1974 to provide base personnel with practical experience in extinguishing fires. This former FTA is currently referenced as site FT-08 under the ERP and was used concurrently with FT-07. FT-08 is surrounded by sparsely vegetated land on all sides (Figure 2.3). The geographic coordinates of FT-08 are 34°22'19.31"N Latitude and 103°18'23.68"W Longitude.

FT-08 is located in the southeast corner of the base adjacent to the abandoned runway (Figure 1.1). During its operational period, the area consisted of an unlined surface area in a half-moon shape that was approximately 100 feet in length. Unused JP-4 was the only fuel burned at this site, with approximately 300 gallons used per exercise. Exercises were conducted approximately twice per quarter at FT-08. Before each training exercise, the ground was pre-soaked with water to minimize infiltration of any residual fuel (CH2M Hill, 1983; Radian, 1986; Cannon AFB, 2007).

The Fire Inspector was not aware of any specific use of AFFF at FT-08. However, he mentioned that it was possible that AFFF was used at FT-08 because it operated after initial use of AFFF by the Air Force in 1970 (Appendix C, Records of Communication). According to an August 1983 ERP Records Search, since approximately 1970, FTA procedures at Cannon AFB have been to “presaturate the ground surface with water, apply the starter fuel, ignite, preburn for 30 to 45 seconds, and extinguish with AFFF.” The quantity of AFFF that may have been used at FT-08 is unknown (CH2M Hill, 1983).

Because the exercise area at FT-08 was unlined, any substance used there would have permeated into the soil. As such, there is a high probability that AFFF was released to the environment at FT-08.

2.3.2 Waste Characteristics

There are no records documenting the exact amount or frequency of AFFF used at FT-08. However, the Fire Inspector and a 1983 ERP Records Search indicate that AFFF was used at the base’s FTAs beginning in approximately 1970. There was no lining or other containment in place at FT-08 (Appendix C, Records of Communication; CH2M Hill, 1983). As such, any AFFF used there from approximately 1970 to 1974 would have permeated the soil and been released to the environment.

Several investigations and remedial actions have occurred at FT-08, but none have focused on AFFF or PFCs.

2.3.3 Pathway and Environmental Hazard Assessment

A complete exposure pathway typically includes the following components: a source of contamination (an environmental medium contaminated at the source or a release mechanism by which chemicals are released from a source medium and transported), an exposure medium by which a receptor comes into contact, and a route of intake for the contaminant into the receptor's body at the exposure point. If any of these elements are missing, the pathway is incomplete. Other release mechanisms resulting in exposure media for receptors may include the uptake of soil contaminants by plants and animals and the emission of soil contaminants into the air in association with dust particles (USEPA, 1989).

2.3.3.1 Groundwater Pathway

The basewide geologic and hydrogeologic settings, including groundwater flow, are provided in Section 1.3. The potential exists for PFC groundwater contamination at the former FTA as a result of historical practices using AFFF from approximately 1970 to 1974.

The primary drinking water source for Cannon AFB is groundwater extracted from the Ogallala Aquifer using seven wells located on base property. The water is disinfected with chlorine and distributed via water towers and underground pipes. The base's water system is registered as PWS ID NM3567905 and serves a population of approximately 9,284 (EDR, 2015c; Cannon AFB, 2014b).

The combined on- and off-base population within a 4-mile radius from FT-08 is approximately 6,540 residents (EDR, 2015a). The closest active drinking water well is Well #5 located approximately 1.5 miles northeast (NMED, 2015). There are no residential areas located downgradient of FT-08, as the land is used mainly for agricultural purposes. The nearest residential area is on base, approximately two miles northwest of FT-08.

2.3.3.2 Surface Water Pathway

The land surface at FT-08 is fairly flat, sloping gently to the east. Drainage at FT-08 is to the southeast and is achieved through overland flow (Radian, 1986). There are no defined drainages within the vicinity of FT-08. There are no water bodies adjacent to FT-08 (Geo Fin, 2015). Therefore, the surface water pathway is considered incomplete. FT-08 is not located within a floodplain (EDR, 2015a).

2.3.3.3 Soil and Air Exposure Pathways

FT-08 is a former FTA that is no longer used by the Cannon AFB Fire Department. The area is restricted to authorized personnel only and there are no on-site workers or residents. The closest residential area is approximately two miles northwest of FT-08. The potential of exposure to burrowing animals would be present.

There are no schools or daycare facilities within a 200-foot radius of FT-08. The closest school is Bella Vista Elementary School located approximately 4.75 miles northeast of FT-08 in Clovis,

New Mexico (EDR, 2015b). The closest daycare facility is a Child Development Center located on base in Building 1435, approximately 2.1 miles northwest of FT-08.

2.4 FORMER FIRE TRAINING AREA NO. 4 (FTA-4)

2.4.1 Description and Operational History

FTA No. 4 was used from approximately 1974 to 1995 to provide base personnel with practical experience in extinguishing fires. Prior to 1974, the area was used as a fuel truck cleaning area. This former FTA is currently referenced as site FTA-4 under the ERP. FTA-4 is surrounded by sparsely vegetated land on all sides (Figure 2.4). The geographic coordinates of FTA-4 are 34°22'13.24"N Latitude and 103°18'18.67"W Longitude.

FTA-4 is located in the southeast corner of the base. During its operational period, FTA-4 consisted of an unlined circular area approximately 400 feet in diameter. A mock aircraft was located in the center of the area. Exercises were conducted approximately twice per quarter. Before each exercise, the ground at FTA-4 was reportedly presaturated with water. From 1974 to 1975, commingled waste oils, solvents, and recovered JP-4 fuel were burned during fire training exercises. In 1975, a 2,000-gallon underground tank was installed to store recovered JP-4 fuel for burning, and until 1995 only JP-4 was burned during exercises (CH2M Hill, 1983; Radian, 1986; Cannon AFB, 2007).

Prior to 1985, runoff generated during exercises at FTA-4 collected in an unlined pit. The soil at the bottom of the pit provided some natural filtration but did not prohibit downward migration of liquid waste (Radian, 1986). According to a July 1987 RCRA Facility Assessment, JP-4 and AFFF collected in this unlined pit during training exercises. The pit was backfilled in 1985 and a new, lined pit with an oil/water separator (OWS) was installed to handle collected runoff. The OWS was removed in 1996 (A.T. Kearney, 1987; HARZA, 1997b).

According to an August 1983 ERP Records Search, since approximately 1970, FTA procedures at Cannon AFB have been to “presaturate the ground surface with water, apply the starter fuel, ignite, preburn for 30 to 45 seconds, and extinguish with AFFF.” The quantity of AFFF that may have been used at FTA-4 is unknown (CH2M Hill, 1983).

Because the training area and original runoff pit at FTA-4 were unlined, any substances used there would have permeated into the soil. As such, there is evidence that AFFF was released to the environment at FTA-4.

2.4.2 Waste Characteristics

There are no records documenting the exact amount or frequency of AFFF used at FTA-4 though fire training exercises occurred twice per quarter from approximately 1974 to 1995. The Fire Inspector and a 1983 ERP Records Search document indicate that AFFF was used at the base’s FTAs beginning in approximately 1970. A July 1987 RCRA Facility Assessment notes that AFFF collected in the original unlined runoff pit during training exercises. There was no lining or other containment in place at the original circular training area at FTA-4. As such, any AFFF used at FTA-4 would have permeated the soil and been released to the environment.

Several investigations and remedial actions have occurred at FTA-4, but none have focused on AFFF or PFCs.

2.4.3 Pathway and Environmental Hazard Assessment

A complete exposure pathway typically includes the following components: a source of contamination (an environmental medium contaminated at the source or a release mechanism by which chemicals are released from a source medium and transported), an exposure medium by which a receptor comes into contact, and a route of intake for the contaminant into the receptor's body at the exposure point. If any of these elements are missing, the pathway is incomplete. Other release mechanisms resulting in exposure media for receptors may include the uptake of soil contaminants by plants and animals and the emission of soil contaminants into the air in association with dust particles (USEPA, 1989).

2.4.3.1 Groundwater Pathway

The basewide geologic and hydrogeologic settings, including groundwater flow, are provided in Section 1.3. The potential exists for PFC groundwater contamination at the former FTA as a result of historical practices using AFFF from approximately 1974 to 1995.

The primary drinking water source for Cannon AFB is groundwater extracted from the Ogallala Aquifer using seven wells located on base property. The water is disinfected with chlorine and distributed via water towers and underground pipes. The base's water system is registered as PWS ID NM3567905 and serves a population of approximately 9,284 (EDR, 2015c; Cannon AFB, 2014b).

The combined on- and off-base population within a 4-mile radius from FT-08 is approximately 6,540 residents (EDR, 2015a). The closest active drinking water well is Well #5 located approximately 1.7 miles northeast (NMED, 2015). There are no residential areas located downgradient of FTA-4, as the land is used mainly for agricultural purposes. The nearest residential area is on base, approximately two miles northwest of FTA-4.

2.4.3.2 Surface Water Pathway

The land surface at FTA-4 is fairly flat, sloping gently to the northeast. Other than the former runoff pits, no drainages previously existed or currently exist at FTA-4. This area was a local depression that would have tended to contain contaminated runoff and concentrate residual contaminants in the surface soils (Radian, 1986). There are no defined drainages within the vicinity of FTA-4. There are no water bodies adjacent to FTA-4 (Geo Fin, 2015). Therefore, the surface water pathway is considered incomplete. FTA-4 is not located within a floodplain (EDR, 2015a).

2.4.3.3 Soil and Air Exposure Pathways

FTA-4 is a former FTA that is no longer used by the Cannon AFB Fire Department. The area is restricted to authorized personnel only and there are no on-site workers or residents. The closest residential area is approximately two miles northwest of FTA-4. The potential of exposure to burrowing animals would be present.

There are no schools or daycare facilities within a 200-foot radius of FTA-4. The closest school is Bella Vista Elementary School located approximately 4.75 miles northeast of FTA-4 in Clovis, New Mexico (EDR, 2015b). The closest daycare facility is a Child Development Center located on base in Building 1435, approximately 2.1 miles northwest of FTA-4.

2.5 ACTIVE FIRE TRAINING AREA

2.5.1 Description and Operational History

The active FTA at Cannon AFB is located immediately northwest of FT-7, FT-8, and FTA-4 in the southeast corner of the base. It is bordered by the abandoned runway to the east and by sparsely vegetated land on all other sides (Figure 2.5). The geographic coordinates of FTA-4 are 34°22'26.63"N Latitude and 103°18'31.95"W Longitude.

According to the Fire Inspector, the active FTA began operations in 1997 and consists of a circular, lined burn pit with a mockup of a large aircraft, a propane fuel tank, a control tower, and a lined evaporation pond. Propane is the only fuel used at this FTA for fire training activities (Appendix C, Records of Communication).

Fire training exercises are conducted at the active FTA approximately once per month using water or AFFF. The fire department also conducts vehicle foam checks annually at the active FTA. The amount of AFFF used at the active FTA varies depending on the exercise or vehicle being tested. Typically, AFFF is sprayed from vehicles into the burn pit until there is a consistent spray pattern (Appendix C, Records of Communication).

Liquids discharged into the burn pit, including water and AFFF, drain to the evaporation pond located approximately 300 feet southwest. The evaporation pond is lined and surrounded by fencing. Liquid in the pond is left to evaporate (Appendix C, Records of Communication).

There was no available documentation or evidence of a release of AFFF to the environment from the lined containment system at the time of the assessment. Photo documentation of the active FTA is provided in Appendix A.

2.5.2 Waste Characteristics

Not Applicable.

2.5.3 Pathway and Environmental Hazard Assessment

Not Applicable.

2.5.3.1 Groundwater Pathway

Not Applicable.

2.5.3.2 Surface Water Pathway

Not Applicable.

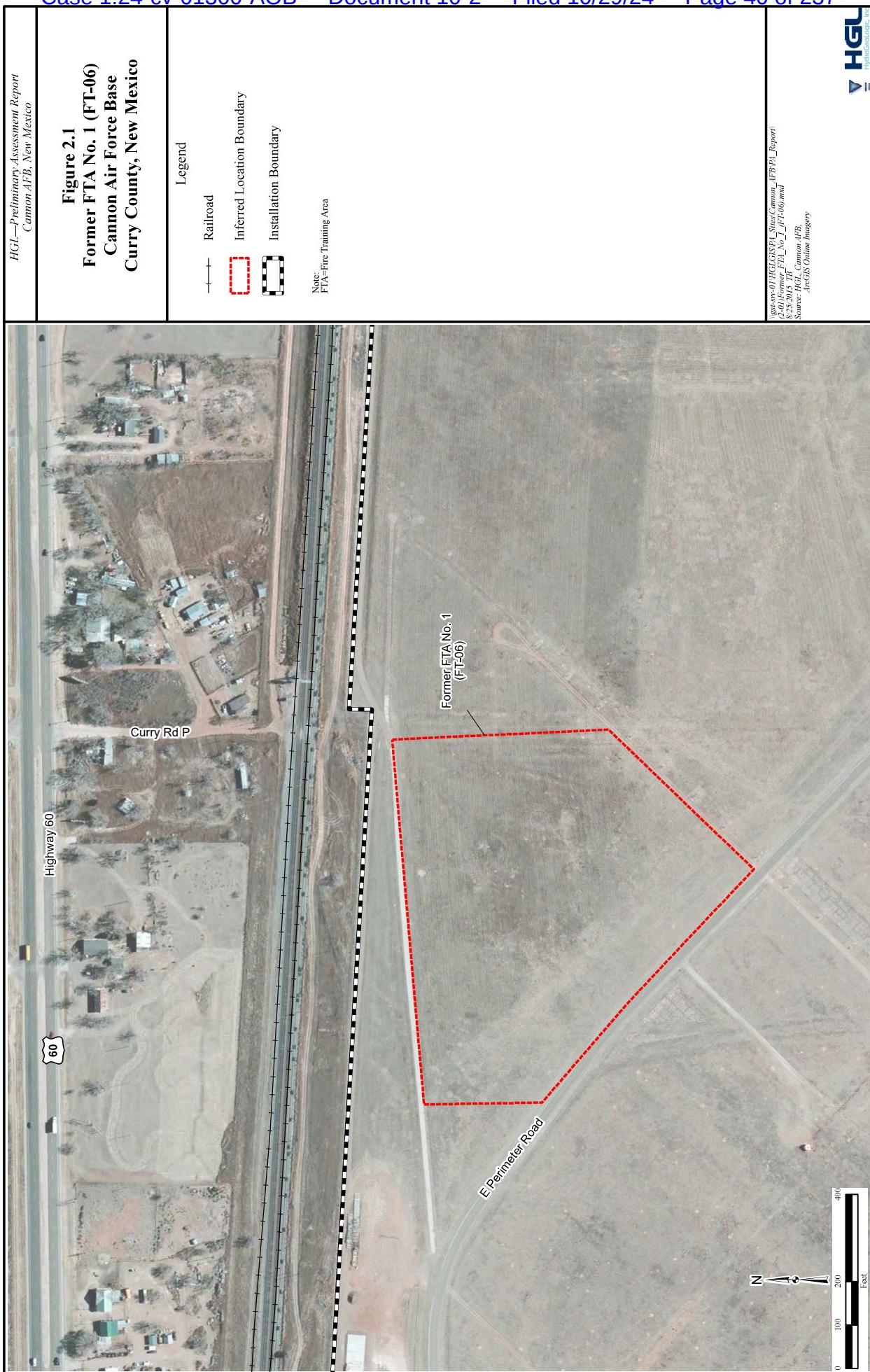
2.5.3.3 Soil and Air Exposure Pathways

Not Applicable.

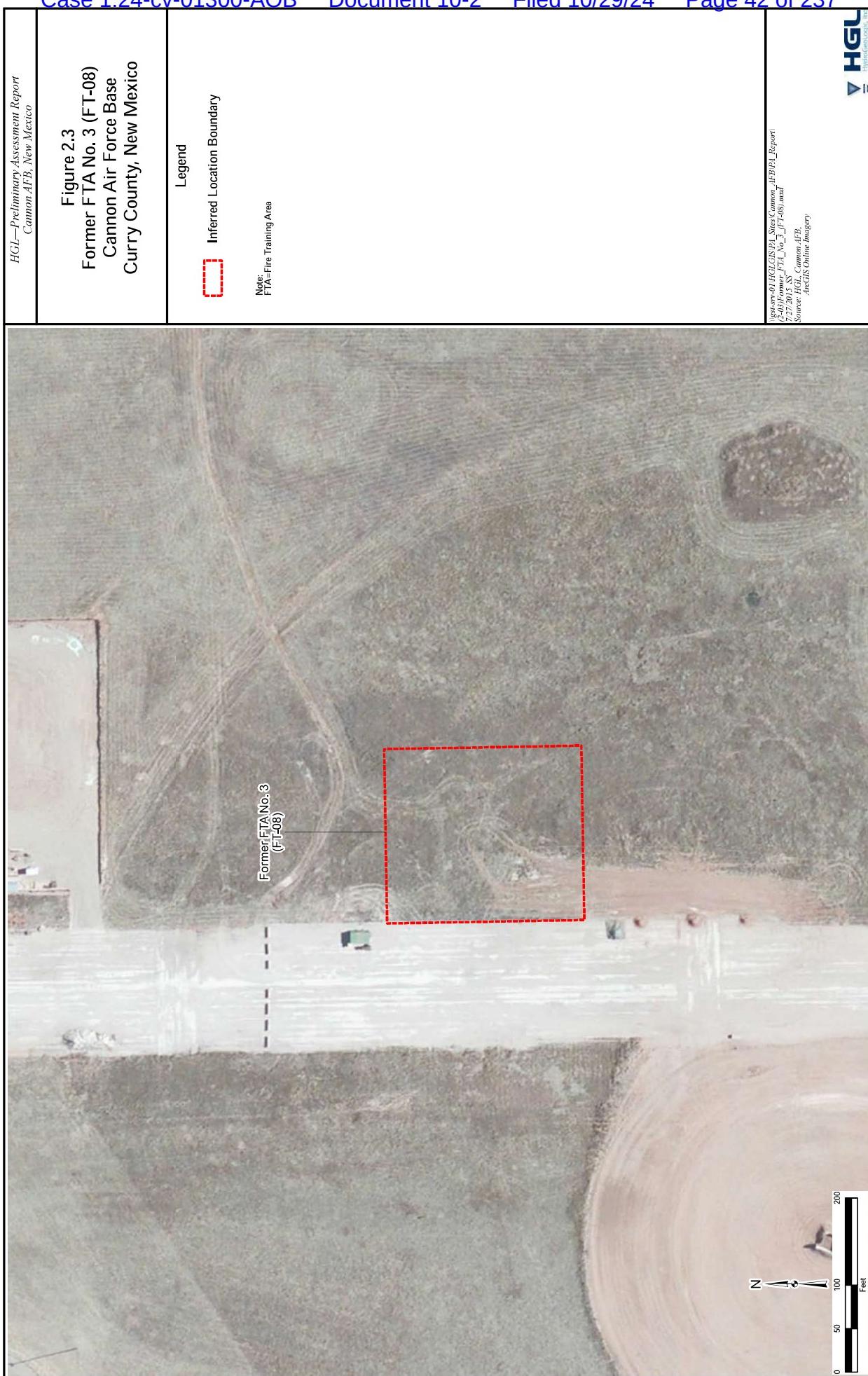
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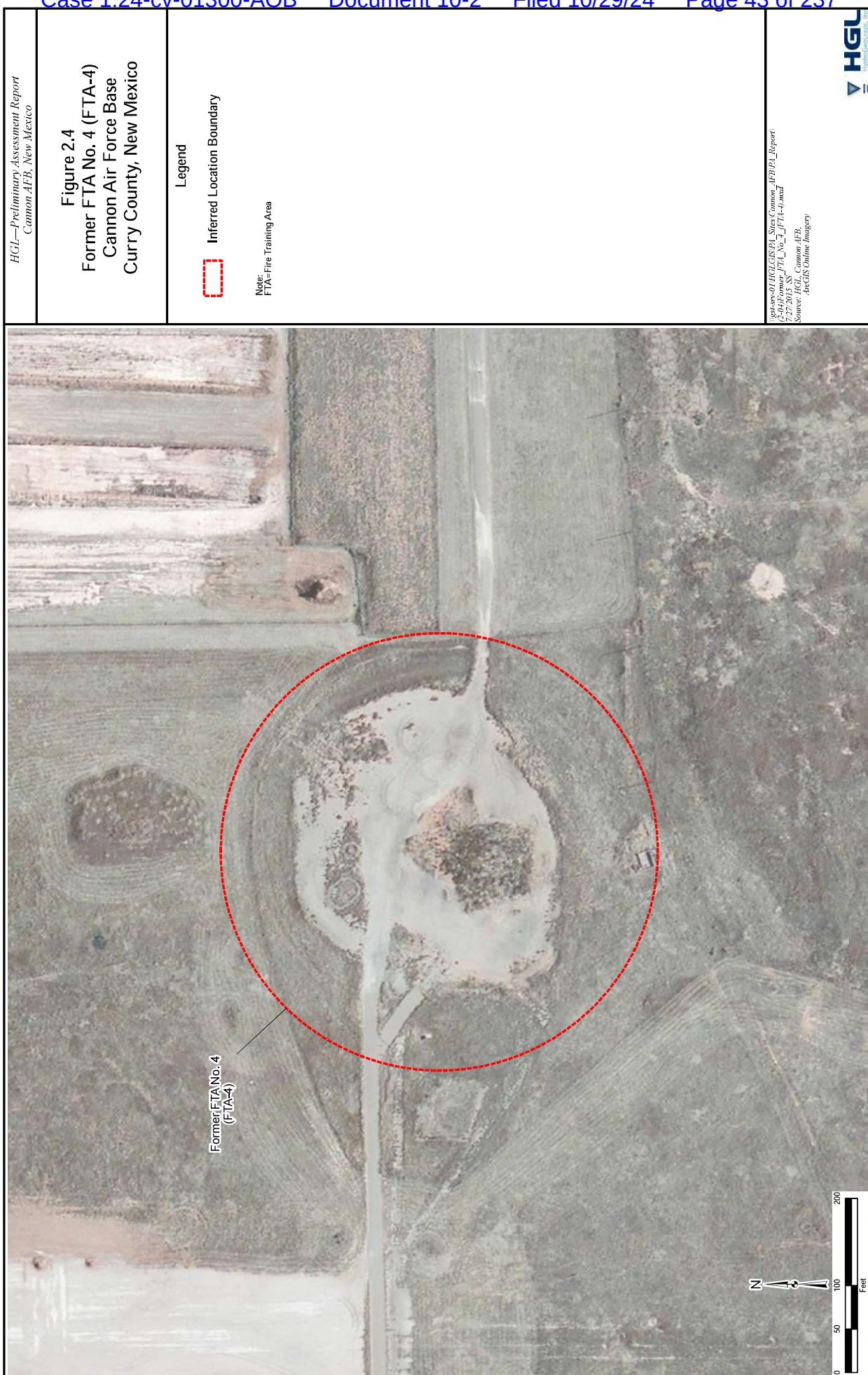
FIGURES

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3.0 NON-FIRE TRAINING AREAS

3.1 HANGARS

Hangars have fixed fire suppression systems that are deluge (water), AFFF, or high-expansion foam (HEF). The fire department and suppressions system installers (or operation and maintenance staff) were interviewed for the types of systems that have been used historically and currently at each hangar. Additionally, Real Property Office records were reviewed to confirm system components and retrofit dates. Systems are charged with foam, not charged with foam, or removed. The subsequent sections identify hangars that have had AFFF installed in the fire suppression system at some point historically.

Hangars that have never been equipped with AFFF are listed below in Table 3.1 and are not discussed in the following sections. However, they are included in Table 4.1 for “group” designation purposes. It is unlikely that the surrounding environmental media has been impacted by PFCs at these locations. Visual inspections, interviews with maintenance staff, and a review of Real Property records confirmed the types of fire suppression systems installed at these hangars (Appendix C, Records of Communication). Hangar locations are presented on Figure 1.1.

Table 3.1
Hangars Never Equipped with AFFF Fire Suppression Systems

Hangar Identification	Latitude	Longitude	Installed Fire Suppression System
Hangar 173	34°23'32.53"N	103°19'16.38"W	Overhead HEF system with supplementary wet, closed-head sprinkler system.
Hangar 174	34°23'34.30"N	103°19'14.36"W	Overhead HEF system with supplementary wet, closed-head sprinkler system.
Hangar 194	34°23'39.62"N	103°19'7.77"W	Overhead HEF system with supplementary wet, closed-head sprinkler system.
Hangar 195	34°23'42.70"N	103°19'4.02"W	Overhead HEF system with supplementary wet, closed-head sprinkler system.
Hangar 196	34°23'44.85"N	103°19'1.41"W	Overhead HEF system with supplementary wet, closed-head sprinkler system.
Hangar 4605	34°22'52.00"N	103°18'56.51"W	Overhead HEF system with supplementary wet, closed-head sprinkler system.
Hangar 4606	34°22'50.20"N	103°18'53.81"W	Overhead HEF system with supplementary wet, closed-head sprinkler system.
Hangar 4607	34°22'48.13"N	103°18'51.26"W	Overhead HEF system with supplementary wet, closed-head sprinkler system.
Hangar 4608	34°22'45.67"N	103°18'48.56"W	Overhead HEF system with supplementary wet, closed-head sprinkler system.
Hangar 4609	34°22'43.35"N	103°18'45.50"W	Overhead HEF system with supplementary wet, closed-head sprinkler system.
Hangar 4610	34°22'40.00"N	103°18'41.33"W	Overhead HEF system with supplementary wet, closed-head sprinkler system.

Hangars that contain or have previously contained AFFF systems at Cannon AFB are located across two areas near the flightline: near the west central portion of the base (Figure 3.1) and near the north central portion of the base (Figure 3.2). These hangars are further discussed in the following sections.

3.1.1 Hangar 109

3.1.1.1 Description and Operational History

Hangar 109 is located in the west central portion of Cannon AFB. The hangar is bordered to the south by a restricted flight ramp, to east by Hangar 119, to the north by asphalt parking lot, and to the west by Building 3107 (Figure 3.1). The hangar mechanical room currently contains a 1,400-gallon aboveground storage tank (AST) containing 3% AFFF and associated piping. The geographic coordinates of Hangar 109 are 34°23'16.08"N Latitude and 103°19'45.59"W Longitude.

According to the Fire Inspector and Real Property office, Hangar 109 is currently occupied by the 27th Special Operations Maintenance Squadron and serves as a parking and general maintenance area for small aircraft. The hangar was constructed in 1991, and the AFFF fire suppression system (3% concentrate) was installed at the time of hangar construction. The hangar has one bay and occupies approximately 20,183 square feet (Appendix C, Records of Communication).

The fire suppression systems serving the hangar bays consist of an overhead wet pipe sprinkler system and an underwing AFFF system. The underwing AFFF system is comprised of a series of nozzle cannons placed along the hangar bay walls that point towards parked aircraft. The system is activated by a manual discharge station serving the hangar bay. All systems are currently operational and are tested every two years using approximately one gallon of AFFF concentrate (Appendix C, Records of Communication).

Discharge from the hangar bay is routed to a floor trench along the edge of the bay or to a storm drain inlet on the concrete ramp adjacent to the hangar. The floor trench in Hangar 109 is equipped with a valve that automatically closes when the AFFF system is activated in order to keep foam from entering the sanitary sewer system. As AFFF and water accumulate in the trench, the valve can be manually opened to gradually allow liquid to enter the sanitary sewer system (Appendix C, Records of Communication).

Hangar personnel are required to notify workers at the wastewater treatment plant (WWTP) when a release of AFFF occurs. WWTP staff can then divert incoming wastewater to a 9 million-gallon storage basin that bypasses the main treatment systems. Wastewater in the basin is then gradually sent to the treatment systems for processing along with regular influent. Effluent from the WWTP is discharged to outfalls that release to the North Playa Lake and the Whispering Winds Golf Course (Appendix C, Records of Communication). The North Playa Lake Outfall and the Whispering Winds Golf Course Outfall are further discussed in Sections 3.4.2 and 3.4.4, respectively.

Additionally, the base water quality manager has authorized AFFF to be discharged to the storm sewer drainage system. Storm drains near Hangar 109 convey liquid directly to the South Playa Lake (Section 3.4.3). There is no record of any AFFF being released to storm drains at Hangar 109 (Appendix C, Records of Communication).

According to the fire suppression systems manager and base air quality specialist, there was a release of AFFF at Hangar 109 in December 1999 when an office fire activated the AFFF system.

Approximately 500 gallons of AFFF were released to the hangar bay, entered the floor trench, and were routed to the WWTP (Appendix C, Records of Communication). There was no available documentation or evidence of a release of AFFF to the environment from the containment systems at the hangar.

Because the release of AFFF in December 1999 was routed to the WWTP and eventually discharged to its outfalls, no release of AFFF to the environment has occurred at Hangar 109. Photo documentation of Hangar 109 is provided in Appendix A.

3.1.1.2 Waste Characteristics

Not Applicable.

3.1.1.3 Pathway and Environmental Hazard Assessment

Not Applicable.

Groundwater Pathway

Not Applicable.

Surface Water Pathway

Not Applicable.

Soil and Air Exposure Pathways

Not Applicable.

3.1.2 Hangar 119

3.1.2.1 Description and Operational History

Hangar 119 is located in the west central portion of Cannon AFB. The hangar is bordered to the south by Hangar 133, to the east by a restricted flight ramp, to the north by Building 102, and to the west by Hangar 109 (Figure 3.1). The hangar mechanical room currently contains a 500-gallon AST containing 3% AFFF and associated piping. The geographic coordinates of Hangar 119 are 34°23'13.45"N Latitude and 103°19'42.53"W Longitude.

According to the Fire Inspector and Real Property office, Hangar 119 is currently occupied by the 27th Special Operations Force Support Squadron and serves as a general storage warehouse. The hangar was constructed in approximately 1997, and the AFFF fire suppression system was installed at the time of hangar construction. The hangar has four bays and occupies approximately 48,000 square feet (Appendix C, Records of Communication).

The fire suppression systems serving the hangar bays consist of an overhead wet pipe sprinkler system and an underwing AFFF system. The underwing AFFF system is comprised of a series of nozzle cannons placed along the hangar bay walls that point toward parked aircraft. The system is

activated by a manual discharge station serving the hangar bays. All systems are currently operational and are tested every two years using approximately one gallon of AFFF concentrate (Appendix C, Records of Communication).

According to the fire suppression systems manager and base air quality specialist, there have been three accidental discharges of AFFF at Hangar 119:

- In September 2006, approximately 60 gallons of AFFF discharged into a storm drain after the AFFF system was accidentally activated, possibly due to a corroded valve.
- In September 2012, a “significant amount” of AFFF discharged into bay number one and flowed onto the asphalt between Hangar 119 and Building 102. A “huge amount” of AFFF entered a storm drain while the rest was left to evaporate.
- In July 2013, an unknown quantity of AFFF discharged onto the concrete flight ramp near Hangar 119. It is unclear if AFFF entered a storm drain during this release.

Each hangar bay is equipped with floor trenches that connect to the WWTP. However, the floor trenches are sealed with concrete, blocking the path to the WWTP. Currently, the only outlets for AFFF at Hangar 119 are storm drains on the flight ramp outside the bays. Storm drains near Hangar 119 convey liquid directly to South Playa Lake. The South Playa Lake Outfall is further discussed in Section 3.4.3.

No evidence or records were located to indicate that the discharges in September 2012 and July 2013 were contained after AFFF entered the asphalt or concrete flight ramp. As such, there is a potential that AFFF migrated to grassy areas to the south and southwest and that a release of AFFF to the surrounding environment occurred at Hangar 119. Photo documentation of Hangar 119 is provided in Appendix A.

3.1.2.2 Waste Characteristics

In September 2012 a “significant amount” of AFFF was discharged onto the asphalt between Hangar 119 and Building 102. Likewise, in July 2013, an unknown quantity of AFFF was discharged onto the concrete flight ramp near Hangar 119. Because there is no evidence that these discharges were contained, the AFFF from both discharges may have permeated nearby soil and been released to the environment.

3.1.2.3 Pathway and Environmental Hazard Assessment

A complete exposure pathway typically includes the following components: a source of contamination (an environmental medium contaminated at the source or a release mechanism by which chemicals are released from a source medium and transported), an exposure medium by which a receptor comes into contact, and a route of intake for the contaminant into the receptor’s body at the exposure point. If any of these elements are missing, the pathway is incomplete. Other release mechanisms resulting in exposure media for receptors may include the uptake of soil contaminants by plants and animals and the emission of soil contaminants into the air in association with dust particles (USEPA, 1989).

Groundwater Pathway

The basewide geologic and hydrogeological settings, including groundwater flow, are provided in Section 1.3. The potential exists for PFC groundwater contamination near Hangar 119 as a result of historical releases of AFFF.

The primary drinking water source for Cannon AFB is groundwater extracted from the Ogallala Aquifer using seven wells located on base property. The water is disinfected with chlorine and distributed via water towers and underground pipes. The base's water system is registered as PWS ID NM3567905 and serves a population of approximately 9,284 (EDR, 2015c; Cannon AFB, 2014b).

The combined on- and off-base population within a 4-mile radius from Hangar 119 is approximately 6,540 residents (EDR, 2015a). The closest active drinking water well is Well #7 located approximately 0.6 miles north of Hangar 119 (NMED, 2015). There are no residential areas located downgradient of Hangar 119, as the land is used mainly for agricultural purposes. The nearest residential area is on base, approximately 0.6 miles north of Hangar 119.

Surface Water Pathway

The land surface at Hangar 119 is flat, and there are no defined drainages within the vicinity of Hangar 119. There are also no water bodies near Hangar 119 (Geo Fin, 2015). Therefore, the surface water pathway is considered incomplete. Hangar 119 is not located within a floodplain (EDR, 2015a).

Soil and Air Exposure Pathways

Hangar 119 is actively used by the 27th Special Operations Force Support Squadron as a general storage warehouse. The hangar is restricted to authorized personnel only. The number of workers on site varies based on the type of activities being performed. Although the potential exists for soil exposure to workers at the hangar, direct contact by workers with soil is not anticipated.

The closest residential area is approximately 0.6 miles north of Hangar 119. The potential of exposure to burrowing animals would be present. There are no schools or daycare facilities within a 200-foot radius of Hangar 119. The closest school is Bella Vista Elementary School located approximately 5.2 miles northeast of Hangar 119 in Clovis, New Mexico (EDR, 2015b). The closest daycare facility is a Child Development Center located on base in Building 1435, approximately 0.75 miles north of Hangar 119.

3.1.3 Hangar 125

3.1.3.1 Description and Operational History

Hangar 125 is located in the west central portion of Cannon AFB. The hangar is bordered to the south by a restricted flight ramp, to the east by Hangar 126, to the north by Building 124, and to the west by Building 102 (Figure 3.1). The hangar mechanical room currently contains a 2,600-

gallon AST containing 3% AFFF and associated piping. The geographic coordinates of Hangar 125 are 34°23'14.89"N Latitude and 103°19'37.72"W Longitude.

According to the Fire Inspector and Real Property office, Hangar 125 is currently occupied by the 26th Special Tactics Squadron. It was constructed in 1989, and the AFFF fire suppression system was installed at the time of hangar construction. The hangar has two bays and occupies approximately 22,950 square feet (Appendix C, Records of Communication).

The fire suppression systems serving the hangar bays consist of an overhead wet pipe sprinkler system and an underwing AFFF system. The underwing AFFF system is comprised of a series of nozzle cannons placed along the hangar bay walls that point toward parked aircraft. The system is activated by a manual discharge station serving the hangar bay. All systems are currently operational and are tested every two years using approximately one gallon of AFFF concentrate (Appendix C, Records of Communication).

Discharge from the hangar bay is routed to a floor trench along the edge of the bay or to a storm drain inlet on the ramp adjacent to the hangar. The floor trench in Hangar 125 is equipped with a valve that automatically closes when the AFFF system is activated in order to keep foam from entering the sanitary sewer system. As AFFF and water accumulate in the trench, the valve can be manually opened to gradually allow liquid to enter the sanitary sewer system (Appendix C, Records of Communication).

Hangar personnel are required to notify workers at the WWTP when a release of AFFF occurs. WWTP staff can then divert incoming wastewater to a 9 million-gallon storage basin that bypasses the main treatment systems. Wastewater in the basin is then gradually sent to the treatment systems for processing along with regular influent. Effluent from the WWTP is released to the North Playa Lake and the Whispering Winds Golf Course (Appendix C, Records of Communication). The North Playa Lake Outfall and the Whispering Winds Golf Course Outfall are further discussed in Sections 3.4.2 and 3.4.4, respectively.

Additionally, the base water quality manager has authorized AFFF to be discharged to the storm sewer drainage system. Storm drains near Hangar 125 convey liquid directly to the South Playa Lake. There is no record of any AFFF being discharged to storm drains at Hangar 125. The South Playa Lake Outfall is further discussed in Section 3.4.3.

According to the fire suppression systems manager and base air quality specialist, there was a release of AFFF at Hangar 125 in September 2002 when an electric generator was started near the hangar and activated the AFFF system. Approximately 110 gallons of AFFF released to one of the hangar bays and routed to the WWTP. The floor trench valve apparently did not function properly during this release, allowing AFFF to route directly to the WWTP (Appendix C, Records of Communication).

Because the release of AFFF in September 2002 was routed to the WWTP and eventually released to its outfalls, no release of AFFF to the surrounding environment has occurred at Hangar 125. Photo documentation of Hangar 125 is provided in Appendix A.

3.1.3.2 Waste Characteristics

Not Applicable.

3.1.3.3 Pathway and Environmental Hazard Assessment

Groundwater Pathway

Not Applicable.

Surface Water Pathway

Not Applicable.

Soil Exposure and Air Pathways

Not Applicable.

3.1.4 Hangar 126

3.1.4.1 Description and Operational History

Hangar 126 is located in the west central portion of Cannon AFB. The hangar is bordered to the south by a restricted flight ramp, to the east by Building 123, to the north by an asphalt parking lot, and to the west by Hangar 125 (Figure 3.1). The hangar mechanical room currently contains a 2,600-gallon AST containing 3% AFFF and associated piping. The geographic coordinates of Hangar 126 are 34°23'16.98"N Latitude and 103°19'35.15"W Longitude.

According to the Fire Inspector and Real Property office, Hangar 126 is currently occupied by the 26th Special Tactics Squadron. The hangar was constructed in 1990, and the AFFF fire suppression system was installed at the time of hangar construction. The hangar has one bay and occupies approximately 22,950 square feet (Appendix C, Records of Communication).

The fire suppression systems serving the hangar bay consists of an overhead wet pipe sprinkler system and an underwing AFFF system. The underwing AFFF system is comprised of a series of nozzle cannons placed along the hangar bay walls that point toward parked aircraft. The system is activated by a manual discharge station serving the hangar bay. All systems are currently operational and are tested every two years using approximately one gallon of AFFF concentrate (Appendix C, Records of Communication).

Discharge from the hangar bay is routed to a floor trench along the edge of the bay or to a storm drain inlet on the ramp adjacent to the hangar. The floor trench in Hangar 126 is equipped with a valve that automatically closes when the AFFF system is activated in order to keep foam from entering the sanitary sewer system. As AFFF and water accumulate in the trench, the valve can be manually opened to gradually allow liquid to enter the sanitary sewer system and route to the WWTP (Appendix C, Records of Communication).

Hangar personnel are required to notify workers at the WWTP when a release of AFFF occurs. WWTP staff can then divert incoming wastewater to a 9 million-gallon storage basin that bypasses the main treatment systems. Wastewater in the basin is then gradually sent to the treatment systems for processing along with regular influent. Effluent from the WWTP is released to the North Playa Lake and the Whispering Winds Golf Course (Appendix C, Records of Communication). The North Playa Lake Outfall and the Whispering Winds Golf Course Outfall are further discussed in Sections 3.4.2 and 3.4.4, respectively.

Additionally, the base water quality manager has authorized AFFF to be discharged to the storm sewer drainage system. Storm drains near Hangar 126 convey liquid directly to the South Playa Lake. There is no record of any AFFF being released to storm drains at Hangar 126 (Appendix C, Records of Communication). The South Playa Lake Outfall is further discussed in Section 3.4.3.

According to the fire suppression systems manager and base air quality specialist, there was a release of AFFF at Hangar 126 in November 2000 when an activation of the fire alarm caused a partial discharge from the AFFF system. Approximately 30 gallons of AFFF discharged from an underwing nozzle in the center of the hangar bay and entered a floor trench (Appendix C, Records of Communication).

Because the release of AFFF in November 2000 was routed to the WWTP and eventually released to its outfalls, no release of AFFF to the surrounding environment has occurred at Hangar 126. Photo documentation of Hangar 126 is provided in Appendix A.

3.1.4.2 Waste Characteristics

Not Applicable.

3.1.4.3 Pathway and Environmental Hazard Assessment

Not Applicable.

Groundwater Pathway

Not Applicable.

Surface Water Pathway

Not Applicable.

Soil and Air Exposure Pathways

Not Applicable.

3.1.5 Hangar 133

3.1.5.1 Description and Operational History

Hangar 133 is located in the west central portion of Cannon AFB. The hangar is bordered to the west, south, and east by a restricted flight ramp and by Hangar 119 to the north (Figure 3.1). The hangar mechanical room currently contains a 1,000-gallon AST containing 3% AFFF and associated piping. The geographic coordinates of Hangar 133 are 34°23'11.02"N Latitude and 103°19'44.29"W Longitude.

According to the Fire Inspector and Real Property office, Hangar 133 is currently occupied by Sierra Nevada Corporation. It was constructed in 1993 and the AFFF fire suppression system was installed at the time of hangar construction. The hangar has three bays and occupies approximately 20,160 square feet (Appendix C, Records of Communication).

The fire suppression systems serving the hangar bays consist of an overhead wet pipe sprinkler system and an underwing AFFF system. The underwing AFFF system is comprised of a series of nozzle cannons placed along the hangar bay walls that point toward parked aircraft. The system is activated by a manual discharge station serving the hangar bays. All systems are currently operational and are tested every two years using approximately one gallon of AFFF concentrate (Appendix C, Records of Communication).

Discharge from the hangar bays is routed to floor trenches along the bay walls or to a storm drain inlet on the ramp adjacent to the hangar. The floor trenches in Hangar 133 are equipped with valves that automatically close when the AFFF system is activated in order to keep foam from immediately entering the sanitary sewer system. As AFFF and water accumulate in the trench, the valve can be manually opened to gradually allow liquid to enter the sanitary sewer system and route to the WWTP (Appendix C, Records of Communication).

Hangar personnel are required to notify workers at the WWTP when a release of AFFF occurs. WWTP staff can then divert incoming wastewater to a 9 million-gallon storage basin that bypasses the main treatment systems. Wastewater in the basin is then gradually sent to the treatment systems for processing along with regular influent. Effluent from the WWTP is released to the North Playa Lake and the Whispering Winds Golf Course (Appendix C, Records of Communication). The North Playa Lake Outfall and the Whispering Winds Golf Course Outfall are further discussed in Sections 3.4.2 and 3.4.4, respectively.

Additionally, the base water quality manager has authorized AFFF to be discharged to the storm sewer drainage system. Storm drains near Hangar 133 convey liquid directly to the South Playa Lake (Appendix C, Records of Communication). The South Playa Lake Outfall is further discussed in Section 3.4.3.

According to the fire suppression systems manager and base air quality specialist, there have been two accidental releases of AFFF at Hangar 133 (Appendix C, Records of Communication):

- In December 2000, “several hundred gallons” of AFFF released during a scheduled rinsing of the hangar fire system. The liquid entered a nearby storm drain.

- In July 2001, approximately 200 gallons of AFFF released into a hangar bay following a power outage. Most of the AFFF entered a floor trench and was routed to the WWTP. However, foam that did not go down the floor trench was washed to nearby “infield soil.”

Because a portion of AFFF released in July 2001 was washed to nearby soil, a release of AFFF to the environment has occurred at Hangar 133. Photo documentation of Hangar 133 is provided in Appendix A.

3.1.5.2 Waste Characteristics

In July 2001, approximately 200 gallons of AFFF were released into a hangar bay following a power outage. Most of the AFFF entered a floor trench and was routed to the WWTP. However, foam that did not go down the floor trench was washed to nearby “infield soil” (Appendix C, Records of Communication). The AFFF would have permeated the soil and been released to the environment.

3.1.5.3 Pathway and Environmental Hazard Assessment

A complete exposure pathway typically includes the following components: a source of contamination (an environmental medium contaminated at the source or a release mechanism by which chemicals are released from a source medium and transported), an exposure medium by which a receptor comes into contact, and a route of intake for the contaminant into the receptor’s body at the exposure point. If any of these elements are missing, the pathway is incomplete. Other release mechanisms resulting in exposure media for receptors may include the uptake of soil contaminants by plants and animals and the emission of soil contaminants into the air in association with dust particles (USEPA, 1989).

Groundwater Pathway

The basewide geologic and hydrogeological settings, including groundwater flow, are provided in Section 1.3. The potential exists for PFC groundwater contamination near Hangar 133 as a result of a historical release of AFFF.

The primary drinking water source for Cannon AFB is groundwater extracted from the Ogallala Aquifer using seven wells located on base property. The water is disinfected with chlorine and distributed via water towers and underground pipes. The base’s water system is registered as PWS ID NM3567905 and serves a population of approximately 9,284 (EDR, 2015c; Cannon AFB, 2014b).

The combined on- and off-base population within a 4-mile radius from Hangar 133 is approximately 6,540 residents (EDR, 2015a). The closest active drinking water well is Well #7 located approximately 0.7 miles north of Hangar 133 near a residential area (NMED, 2015). There are no residential areas located downgradient of Hangar 133, as the land is used mainly for agricultural purposes. The nearest residential area is on base, approximately 0.75 miles north of Hangar 133.

Surface Water Pathway

The land surface at Hangar 133 is flat, and there are no defined drainages within the vicinity of Hangar 133. There are also no water bodies near Hangar 133 (Geo Fin, 2015). Therefore, the surface water pathway is considered incomplete. Hangar 133 is not located within a floodplain (EDR, 2015a).

Soil and Air Exposure Pathways

Hangar 133 is actively used by Sierra Nevada Corporation for the maintenance of small aircraft. The hangar is restricted to authorized personnel only. The number of workers on site varies based on the type of maintenance and activities being performed. Although the potential exists for soil exposure to workers at the hangar, direct contact by workers with soil is not anticipated.

The closest residential area is approximately 0.7 miles north of Hangar 133. The potential of exposure to burrowing animals would be present.

There are no schools or daycare facilities within a 200-foot radius of Hangar 133. The closest school is Bella Vista Elementary School located approximately five miles northeast of Hangar 133 in Clovis, New Mexico (EDR, 2015b). The closest daycare facility is a Child Development Center located on base in Building 1435, approximately 0.8 miles northeast of Hangar 133.

3.1.6 Hangar 197

3.1.6.1 Description and Operational History

Hangar 197 is located in the north central portion of Cannon AFB. The hangar is bordered to the north by an asphalt parking lot, to the west by Hangar 196, to the south by a restricted flight ramp, and to the east by Building 196 (Figure 3.2). The hangar mechanical room currently contains an AST with 3% AFFF and associated piping.¹ The geographic coordinates of Hangar 197 are 34°23'47.17"N Latitude and 103°18'59.00"W Longitude.

According to the Fire Inspector and Real Property office, Hangar 197 is currently occupied by the 27th Special Operations Aircraft Maintenance Squadron and is used for the storage and maintenance of small aircraft. It was constructed in 1990, and the AFFF fire suppression system was installed at the time of hangar construction. The hangar has two bays and occupies approximately 16,650 square feet (Appendix C, Records of Communication).

The fire suppression systems serving the hangar bays consist of an overhead wet pipe sprinkler system and an underwing AFFF system. The underwing AFFF system is comprised of a series of nozzle cannons placed along the hangar bay walls that point toward parked aircraft. The system is activated by a manual discharge station serving the hangar bays. All systems are currently operational and are tested every two years using approximately one gallon of AFFF concentrate (Appendix C, Records of Communication).

¹ The tank's information placard does not list its capacity. As such, the capacity of the tank is unknown.

Discharge from the hangar bays is routed to floor trenches along the bay walls or to a storm drain inlet on the ramp adjacent to the hangar. The floor trenches in Hangar 197 are equipped with valves that automatically close when the AFFF system is activated in order to keep foam from immediately entering the sanitary sewer system. As AFFF and water accumulate in the trench, the valve can be manually opened to gradually allow liquid to enter the sanitary sewer system and route to the WWTP (Appendix C, Records of Communication).

Hangar personnel are required to notify workers at the WWTP when a release of AFFF occurs. WWTP staff can then divert incoming wastewater to a 9 million-gallon storage basin that bypasses the main treatment systems. Wastewater in the basin is then gradually sent to the treatment systems for processing along with regular influent. Effluent from the WWTP is released to the North Playa Lake and the Whispering Winds Golf Course (Appendix C, Records of Communication). The North Playa Lake Outfall and the Whispering Winds Golf Course Outfall are further discussed in Sections 3.4.2 and 3.4.4, respectively.

Additionally, the base water quality manager has authorized AFFF to be discharged to the storm sewer drainage system. Storm drains near Hangar 197 convey liquid directly to the South Playa Lake (Appendix C, Records of Communication). The South Playa Lake Outfall is further discussed in Section 3.4.3.

According to the fire suppression systems manager and base air quality specialist, there have been two accidental releases of AFFF at Hangar 197 (Appendix C, Records of Communication):

- In December 2000, an unknown quantity of AFFF was released to a nearby storm drain when a valve broke during routine testing.
- In April 2005, an unknown quantity of AFFF was released into a hangar bay from two underwing nozzles. The cause of the release is not known, but some AFFF may have entered a floor trench and been routed to the WWTP. It is unclear if the floor trench valve was activated, but no foam was observed at the WWTP or North Playa Lake.

Because the releases of AFFF at Hangar 197 would have been routed to the WWTP or South Playa Lake, there was no evidence of a release of AFFF to the surrounding environment at the time of the assessment. Photo documentation of Hangar 197 is provided in Appendix A.

3.1.6.2 Waste Characteristics

Not Applicable.

3.1.6.3 Pathway and Environmental Hazard Assessment

Not Applicable.

Groundwater Pathway

Not Applicable.

Surface Water Pathway

Not Applicable.

Soil and Air Exposure Pathways

Not Applicable.

3.1.7 Hangar 199

3.1.7.1 Description and Operational History

Hangar 199 is located in the north central portion of Cannon AFB. The hangar is bordered to the north by an asphalt parking lot, to the west by Building 198, to the south by a restricted flight ramp, and to the east by Hangar 204 (Figure 3.2). The hangar mechanical room currently contains an AST with HEF and associated piping.² The geographic coordinates of Hangar 199 are 34°23'51.99"N Latitude and 103°18'53.29"W Longitude.

According to the Fire Inspector and Real Property office, Hangar 199 is currently occupied by the 27th Special Operations Force and is used for the storage and maintenance of CV-22 aircraft. It was constructed in 1992 and an AFFF fire suppression system was installed at the time of hangar construction. The hangar has three bays and occupies approximately 34,648 square feet. In approximately 1999, the hangar's AFFF system was removed and replaced with an HEF system (Appendix C, Records of Communication).

Discharge from the hangar bays is routed to floor trenches along the bay walls or to a storm drain inlet on the ramp adjacent to the hangar. The floor trenches in Hangar 199 are equipped with valves that would have automatically closed when the AFFF system was activated in order to keep foam from immediately entering the sanitary sewer system. As AFFF and water accumulated in the trenches, the valve would have been manually opened to gradually allow liquid to enter the sanitary sewer system (Appendix C, Records of Communication).

Prior to the construction of the WWTP in 1998, the sanitary sewer system drained to the former sewage lagoons (Section 3.4.1). Currently, hangar personnel are required to notify workers at the WWTP when a release of AFFF occurs. WWTP staff can then divert incoming wastewater to a 9 million-gallon storage basin that bypasses the main treatment systems. Wastewater in the basin is then gradually sent to the treatment systems for processing along with regular influent. Effluent from the WWTP is released to the North Playa Lake and the Whispering Winds Golf Course (Appendix C, Records of Communication). The North Playa Lake Outfall and the Whispering Winds Golf Course Outfall are further discussed in Sections 3.4.2 and 3.4.4, respectively.

Additionally, the base water quality manager has authorized AFFF to be discharged to the storm sewer drainage system. Storm drains near Hangar 199 convey liquid directly to the South Playa Lake (Section 3.4.3) (Appendix C, Records of Communication). The South Playa Lake Outfall is further discussed in Section 3.4.3.

According to the fire suppression systems manager and base air quality specialist, there have been three accidental releases of AFFF at Hangar 199 (Appendix C, Records of Communication):

² The tank's information placard does not list its capacity. As such, the capacity of the tank is unknown

- In June 1994, approximately 50 gallons of AFFF discharged to a storm drain outside of hangar bay number 2. The cause of the release is unknown.
- In May 1996, approximately 12 gallons of AFFF discharged at Hangar 199. The cause of the release is unknown, although AFFF would have entered a floor trench or storm drain.
- In June 1996, approximately 200 gallons of AFFF released at Hangar 199. The cause of the release is unknown, and it is unclear if AFFF entered a floor trench or storm drain.

Because the releases of AFFF at Hangar 199 occurred before the construction of the WWTP, AFFF would have been routed to the former sewage lagoons or South Playa Lake. As such, there was no evidence of a release of AFFF to the surrounding environment at Hangar 199. Photo documentation of Hangar 199 is provided in Appendix A.

3.1.7.2 Waste Characteristics

Not Applicable.

3.1.7.3 Pathway and Environmental Hazard Assessment

Not Applicable.

Groundwater Pathway

Not Applicable.

Surface Water Pathway

Not Applicable.

Soil and Air Exposure Pathways

Not Applicable.

3.1.8 Hangar 204

3.1.8.1 Description and Operational History

Hangar 204 is located in the north central portion of Cannon AFB. The hangar is bordered to the north by an asphalt parking lot, to the west by Hangar 199, to the south by a restricted flight ramp, and to the east by Hangar 208 (Figure 3.2). The hangar mechanical room currently contains an 800-gallon AST with 3% AFFF and associated piping. The geographic coordinates of Hangar 204 are 34°23'54.01"N Latitude and 103°18'50.03"W Longitude.

According to the Fire Inspector and Real Property office, Hangar 204 is currently occupied by the 27th Special Operations Force and is used for the storage and maintenance of CV-22 aircraft. It was constructed in 1993, and the AFFF fire suppression system was installed at the time of hangar construction. The hangar has two bays and occupies approximately 17,295 square feet (Appendix C, Records of Communication).

The fire suppression systems serving the hangar bays consist of an overhead wet pipe sprinkler system and an underwing AFFF system. The underwing AFFF system is comprised of a series of nozzle cannons placed along the hangar bay walls that point toward parked aircraft. The system is activated by a manual discharge station serving the hangar bays. All systems are currently operational and are tested every two years using approximately one gallon of AFFF concentrate (Appendix C, Records of Communication).

Discharge from the hangar bays is routed to floor trenches along the bay walls or to a storm drain inlet on the ramp adjacent to the hangar. The floor trenches in Hangar 204 are equipped with valves that automatically close when the AFFF system is activated in order to keep foam from immediately entering the sanitary sewer system. As AFFF and water accumulate in the trenches, the valve can be manually opened to gradually allow liquid to enter the sanitary sewer system and route to the WWTP (Appendix C, Records of Communication).

Hangar personnel are required to notify workers at the WWTP when a release of AFFF occurs. WWTP staff can then divert incoming wastewater to a 9 million-gallon storage basin that bypasses the main treatment systems. Wastewater in the basin is then gradually sent to the treatment systems for processing along with regular influent. The North Playa Lake Outfall and the Whispering Winds Golf Course Outfall are further discussed in Sections 3.4.2 and 3.4.4, respectively.

Additionally, the base water quality manager has authorized AFFF to be discharged to the storm sewer drainage system. Storm drains near Hangar 204 convey liquid directly to the South Playa Lake (Appendix C, Records of Communication). The South Playa Lake Outfall is further discussed in Section 3.4.3.

According to the fire suppression systems manager and base air quality specialist, there has been one accidental discharge of AFFF at Hangar 204. In May 2002, the AFFF system was activated when the building heater caused a bird nest to catch fire. According to a list of AFFF discharges at Cannon AFB, approximately 700 gallons of AFFF discharged onto the concrete ramp and was left to evaporate (Appendix C, Records of Communication).

There was no evidence that, as a result of the discharge in May 2002, AFFF reached the WWTP, South Playa Lake, or the grassy areas surrounding the hangar to the south and east. Furthermore, no evidence or records were located to indicate that the discharge was contained on the concrete ramp. As such, there is a potential that AFFF migrated to grassy areas to the south and east and that a release of AFFF to the surrounding environment occurred at Hangar 204. Photo documentation of Hangar 204 is provided in Appendix A.

3.1.8.2 Waste Characteristics

In May 2002, approximately 700 gallons of AFFF were discharged onto a concrete ramp near Hangar 204 following a building fire. According to a list of AFFF releases at Cannon AFB, the AFFF was reportedly left to evaporate (Appendix C, Records of Communication). However, there is no evidence that the discharge of AFFF was contained on the concrete ramp. As such, AFFF from this discharge may have permeated nearby soil and been released to the environment.

3.1.8.3 Pathway and Environmental Hazard Assessment

A complete exposure pathway typically includes the following components: a source of contamination (an environmental medium contaminated at the source or a release mechanism by which chemicals are released from a source medium and transported), an exposure medium by which a receptor comes into contact, and a route of intake for the contaminant into the receptor's body at the exposure point. If any of these elements are missing, the pathway is incomplete. Other release mechanisms resulting in exposure media for receptors may include the uptake of soil contaminants by plants and animals and the emission of soil contaminants into the air in association with dust particles (USEPA, 1989).

3.1.8.4 Groundwater Pathway

The basewide geologic and hydrogeological settings, including groundwater flow, are provided in Section 1.3. The potential exists for PFC groundwater contamination near Hangar 204 as a result of a historical release of AFFF.

The primary drinking water source for Cannon AFB is groundwater extracted from the Ogallala Aquifer using seven wells located on base property. The water is disinfected with chlorine and distributed via water towers and underground pipes. The base's water system is registered as PWS ID NM3567905 and serves a population of approximately 9,284 (EDR, 2015c; Cannon AFB, 2014b).

The combined on- and off-base population within a 4-mile radius from Hangar 204 is approximately 6,540 residents (EDR, 2015a). The closest active drinking water well is Well #3 located approximately 150 feet northwest of Hangar 204 (NMED, 2015). There are no residential areas located downgradient of Hangar 204, as the land is used mainly for agricultural purposes. The nearest residential area is on base, approximately 0.8 miles west of Hangar 204.

3.1.8.5 Surface Water Pathway

The land surface at Hangar 204 is flat, and there are no defined drainages within the vicinity of Hangar 204. There are also no water bodies near Hangar 204 (Geo Fin, 2015). Therefore, the surface water pathway is considered incomplete. Hangar 204 is not located within a floodplain (EDR, 2015a).

3.1.8.6 Soil and Air Exposure Pathways

Hangar 204 is actively used by the 27th Special Operations Force and for the storage and maintenance of CV-22 aircraft. The hangar is restricted to authorized personnel only. The number of workers on site varies based on the type of maintenance and activities being performed. Although the potential exists for soil exposure to workers at the hangar, direct contact by workers with soil is not anticipated.

The closest residential area is approximately 0.8 miles west of Hangar 204. The potential of exposure to burrowing animals would be present.

There are no schools or daycare facilities within a 200-foot radius of Hangar 204. The closest school is Bella Vista Elementary School located approximately 4.2 miles northeast of Hangar 204 in Clovis, New Mexico (EDR, 2015b). The closest daycare facility is a Child Development Center located on base in Building 1435, approximately 0.7 miles west of Hangar 204.

3.1.9 Hangar 208

3.1.9.1 Description and Operational History

Hangar 208 is located in the north central portion of Cannon AFB. The hangar is bordered to the north by a concrete ramp, to the west by an asphalt parking lot, to the south by a restricted flight ramp, and to the east by a grassy area (Figure 3.2). The hangar mechanical room currently contains an AST with HEF and associated piping.³ The geographic coordinates of Hangar 208 are 34°23'57.32"N Latitude and 103°18'47.02"W Longitude.

According to the Fire Inspector and Real Property office, Hangar 208 was constructed in 1995 and is currently occupied by the 27th Special Operations Force and is used for the storage and maintenance of CV-22 aircraft. An AFFF fire suppression system with a 1,200-gallon AST was installed at the time of hangar construction. The hangar has five bays and occupies approximately 73,000 square feet. In approximately 2013, the hangar's AFFF system was removed and replaced with an HEF system (Appendix C, Records of Communication).

Discharge from the hangar bays is routed to floor trenches along the bay walls or to a storm drain inlet on the ramp adjacent to the hangar. The floor trenches in Hangar 208 are equipped with valves that automatically closed when the AFFF system was activated in order to keep foam from immediately entering the sanitary sewer system. As AFFF and water accumulated in the trenches, the valves would have been manually opened to gradually allow liquid to enter the sanitary sewer system (Appendix C, Records of Communication).

Prior to the construction of the WWTP in 1998, the sanitary sewer system drained to the former sewage lagoons (Section 3.4.1). Currently, hangar personnel are required to notify workers at the WWTP when a release of AFFF occurs. WWTP staff can then divert incoming wastewater to a 9 million-gallon storage basin that bypasses the main treatment systems. Wastewater in the basin is then gradually sent to the treatment systems for processing along with regular influent. Effluent from the WWTP is discharged to North Playa Lake and the golf course (Appendix C, Records of Communication). Additionally, AFFF is authorized to be discharged to the storm sewer drainage system. Storm drains near Hangar 208 convey liquid directly to the South Playa Lake (Appendix C, Records of Communication).

According to the fire suppression systems manager and base air quality specialist, there have been at least four accidental discharges of AFFF at Hangar 208 (Appendix C, Records of Communication):

- In March 1998, approximately 5 gallons of AFFF released into the sanitary sewer system due to an inadvertent activation of the AFFF system.

³ The tank's information placard does not list its capacity. As such, the capacity of the tank is unknown.

- In June 1998, approximately 1,000 gallons of AFFF released into the sanitary sewer system due to a leak from the AFFF AST. The tank leaked for approximately 48 hours.
- In July 1998, approximately 20 gallons of AFFF released into the sanitary sewer system during the replacement of the bladder on the AFFF AST.
- In December 1998, an unknown quantity of AFFF was released into the sanitary sewer system due to an “operator error” in the mechanical room.

Because the releases of AFFF at Hangar 208 may have occurred prior to the opening of the WWTP, AFFF may have been routed to either the former sewage lagoons or the WWTP. There was no evidence of a release of AFFF to the surrounding environment at Hangar 208.

3.1.9.2 Waste Characteristics

Not Applicable.

3.1.9.3 Pathway and Environmental Hazard Assessment

Not Applicable.

Groundwater Pathway

Not Applicable.

Surface Water Pathway

Not Applicable.

Soil and Air Exposure Pathways

Not Applicable.

3.2 FIRE STATIONS

3.2.1 Current Fire Station

3.2.1.1 Description and Operational History

The current fire station (Building 158) is located in the west central portion of Cannon AFB near a majority of the base’s hangars (Figure 1.1). The station is bordered to the north by an asphalt parking lot, to the west by Building 164, to the south by a restricted flight ramp, and to the east by Hangar 173 (Figure 3.3). The geographic coordinates of the current fire station are 34°23'28.94"N Latitude and 103°19'20.73"W Longitude.

The current fire station was constructed in 2005 and currently includes the following equipment:

- Foam trailer – 1,000-gallon AFFF capacity,
- Crash truck C-3 – 150-gallon AFFF capacity,
- Crash truck C-5 – 200-gallon AFFF capacity,
- Crash truck C-7 – 500-gallon AFFF capacity,

- Crash truck C-8 – 210-gallon AFFF capacity,
- Crash truck C-11 – 400-gallon AFFF capacity,
- Engine E-4 – Five containers (5-gallon) of AFFF stored on truck, and
- Engine E-25 – Five containers (5-gallon) of AFFF stored on truck.

Furthermore, a bench stock supply of AFFF is regularly stored on the stall floors and in a supply closet near the stalls. At the time of the assessment, approximately 110 gallons (two 55-gallon barrels) of AFFF were stored on the stall floors in spill-containment drums. The supply closet contained approximately 695 gallons of AFFF (in 5-gallon buckets) stored on a spill-containment pallet (Appendix C, Records of Communication).

A floor drain runs the length of the station stalls. Wastewater and liquid that enters the drain is transported through a series of mains to the installation's WWTP. There is no OWS installed at the current fire station.

Daily operational checks, monthly time and distance testing, and hose washouts for all firefighting vehicles at the current fire station are conducted on the concrete ramp north of the fire station using water. A storm drain is present on the concrete ramp that drains to the South Playa Lake. Annual foam checks for vehicles stored at this station are conducted at the active FTA. Refilling activities for AFFF are conducted in station stalls. AFFF is transferred using dedicated pumps in emergency vehicles or mounted on AFFF trailers (Appendix C, Records of Communication).

The Fire Inspector had no knowledge or record of any spills or releases of AFFF at the current fire station (Appendix C, Records of Communication).

At the time of the assessment, there was no available documentation or evidence to suggest that a release of AFFF to the environment has ever occurred at this fire station. Photo documentation of the current fire station is provided in Appendix A.

3.2.1.2 Waste Characteristics

Not Applicable.

3.2.1.3 Pathway and Environmental Hazard Assessment

Not Applicable.

Groundwater Pathway

Not Applicable.

Surface Water Pathway

Not Applicable.

Soil and Air Exposure Pathways

Not Applicable.

3.2.2 Former Fire Station

3.2.2.1 Description and Operational History

The former fire station (Building 130) is located in the west central portion of Cannon AFB near a majority of the base's hangars (Figure 1.1). The building is bordered to the north and west by asphalt parking lots, to the south by a restricted flight ramp, and to the east by Building 135 (Figure 3.4). The geographic coordinates of the former fire station are 34°23'22.65"N Latitude and 103°19'28.72"W Longitude.

The building served as the base's sole fire station until 2005, when the current fire station was opened. It is currently occupied by the Air Force Explosive Ordnance Disposal group and the station stalls have been converted to a gym. According to the Fire Inspector, operations at the former fire station were similar to those at the current station and the same types of vehicles and equipment were stored at the station (Appendix C, Records of Communication).

Daily operational checks and monthly time and distance testing for all firefighting vehicles at the former fire station were conducted on the concrete ramp south of the former fire station using water. Annual foam checks for vehicles stored at this station were conducted at the active FTA. Refilling activities for AFFF were conducted in station stalls. AFFF was transferred using dedicated pumps in emergency vehicles or mounted on AFFF trailers. At the time of the inspection, one floor drain was visible in the station stalls (Appendix C, Records of Communication).

Hose washouts at the former fire station were conducted in a large closet near the station stalls. Hoses were hung there to dry and liquid would have entered a drain on the closet floor (Appendix C, Records of Communication).

Additionally, a bench stock supply of AFFF was stored in outdoor closets on the east side of the building. The Fire Inspector wasn't aware of the exact quantity of AFFF that was stored there or if any spill containment mechanisms were in place, but he indicated that the supply would have included several 55-gallon drums and/or 5-gallon containers. A storm drain was visible approximately 20 feet from the outdoor closets, and the Fire Inspector indicated that any leaks or spills of AFFF near the outdoor closets could have entered that drain (Appendix C, Records of Communication).

Wastewater and liquid that entered floor drains inside the former fire station was routed through an OWS located on the east side of the building. The OWS drained to the sanitary sewer system and eventually to the WWTP. The Fire Inspector had no knowledge or record of any spills or releases of AFFF at the former fire station (Appendix C, Records of Communication).

At the time of the assessment, there was no available documentation or evidence to suggest that a release of AFFF to the environment has ever occurred at this fire station. Any spills or releases of AFFF would have been routed to the WWTP or the South Playa Lake.

3.2.2.2 Waste Characteristics

Not Applicable.

3.2.2.3 Pathway and Environmental Hazard Assessment

Not Applicable.

3.2.2.4 Groundwater Pathway

Not Applicable.

3.2.2.5 Surface Water Pathway

Not Applicable.

3.2.2.6 Soil and Air Exposure Pathways

Not Applicable.

3.3 EMERGENCY RESPONSE

According to a records query and personal interviews, the Cannon AFB Fire Department has not responded to any fire emergencies requiring the application of AFFF to suppress fires.

3.4 OTHER**3.4.1 Former Sewage Lagoons****3.4.1.1 Description and Operational History**

The former sewage lagoons consisted of two unlined surface impoundments that were used from 1966 to 1998 and received sanitary and industrial waste from base facilities prior to the construction of the WWTP. The sewage lagoons were located on the east central portion of Cannon AFB, directly east of the abandoned runway and south of the current WWTP (Figure 3.5). The geographic coordinates of the former sewage lagoons are 34°23'14.95"N Latitude and 103°18'18.62"W Longitude.

The sewage lagoons had a total surface area of 32 acres and were separated by a 12-foot-wide levee. Sewage discharge to the lagoons ceased in 1998 when the WWTP began operations. However, the base continued to discharge treated wastewater to the lagoons for a short period of time in order to prevent direct exposure to the underlying sludge. In early 1998, the base stopped discharging treated wastewater to the lagoons and allowed them to dry (USACE, 2008).

The former sewage lagoon area is designated as Solid Waste Management Unit (SWMU) 101 and has been the site of several investigations and remedial actions regarding volatile organic compounds, metals, pesticides, nitrate, and sulfate. In July 2008, a status of No Further Action was recommended for the area by the U.S. Army Corps of Engineers (USACE, 2008).

The former sewage lagoons would have received any AFFF that entered the sanitary sewer system from 1966 to 1998. As discussed in Sections 3.1.7 and 3.1.9, there are documented releases of

AFFF to the sanitary sewer system from Hangars 199 and 208 prior to and during 1998. As such, there is evidence that AFFF was released to the environment at the former sewage lagoons.

3.4.1.2 Waste Characteristics

During its operation period of 1966 to 1998, the former sewage lagoons would have received any AFFF that entered the sanitary sewer system. There is evidence that AFFF was released at Hangar 199 (Section 3.1.7) and Hangar 208 (Section 3.1.9) during this time period, which may have entered the sanitary sewer system and been routed to the former sewage lagoons.

Several investigations and remedial actions have occurred at the former sewage lagoons, but none have focused on AFFF or PFCs.

3.4.1.3 Pathway and Environmental Hazard Assessment

A complete exposure pathway typically includes the following components: a source of contamination (an environmental medium contaminated at the source or a release mechanism by which chemicals are released from a source medium and transported), an exposure medium by which a receptor comes into contact, and a route of intake for the contaminant into the receptor's body at the exposure point. If any of these elements are missing, the pathway is incomplete. Other release mechanisms resulting in exposure media for receptors may include the uptake of soil contaminants by plants and animals and the emission of soil contaminants into the air in association with dust particles (USEPA, 1989).

Groundwater Pathway

The basewide geologic and hydrogeologic settings, including groundwater flow, are provided in Section 1.3. The potential exists for PFC groundwater contamination at the former sewage lagoons as a result of historical wastewater disposal practices. Wastewater discharged to the former sewage lagoons during the operational period may have contained AFFF.

The primary drinking water source for Cannon AFB is groundwater extracted from the Ogallala Aquifer using seven wells located on base property. The water is disinfected with chlorine and distributed via water towers and underground pipes. The base's water system is registered as PWS ID NM3567905 and serves a population of approximately 9,284 (EDR, 2015c; Cannon AFB, 2014b).

The combined on- and off-base population within a 4-mile radius from the former sewage lagoons is approximately 6,540 residents (EDR, 2015a). The closest active drinking water well is Well #5 located approximately one half mile northeast of the former sewage lagoons (NMED, 2015). There are no residential areas located downgradient of the former sewage lagoons, as the land is used mainly for industrial and agricultural purposes. The nearest residential area is on base approximately 1.5 miles northwest of the former sewage lagoons.

Surface Water Pathway

The land surface at the former sewage lagoon area is flat. Water within the lagoons would have been contained, as no drainages previously existed or currently exist near the area. This area would have tended to contain contaminated water and concentrate residual contaminants in the surface soils. There are no water bodies adjacent to the former sewage lagoon area (Geo Fin, 2015). Therefore, the surface water pathway is considered incomplete. The former sewage lagoon area is not located within a floodplain (EDR, 2015a).

Soil and Air Exposure Pathways

The former sewage lagoon area is no longer used by Cannon AFB. The area is restricted to authorized personnel only and there are no on-site workers or residents. The closest residential area is approximately 1.5 miles northwest of the former sewage lagoons. The potential of exposure to burrowing animals would be present.

There are no schools or daycare facilities within a 200-foot radius of the former sewage lagoons. The closest school is Bella Vista Elementary School located approximately four miles northeast of the former sewage lagoons in Clovis, New Mexico (EDR, 2015b). The closest daycare facility is a Child Development Center located on base in Building 1435, approximately 1.4 miles northwest of the former sewage lagoons.

3.4.2 North Playa Lake Outfall

3.4.2.1 Description and Operational History

North Playa Lake is currently the main outfall for treated effluent from the WWTP on Cannon AFB. The geographic coordinates of North Playa Lake are 34°23'11.51"N Latitude and 103°17'54.21"W Longitude.

Cannon AFB owns and operates its own sanitary sewer and wastewater treatment system that is located at the WWTP in the east central portion of the base (Figure 3.6). Wastewater generated on Cannon AFB is transported through a series of mains and lift stations to the installation's WWTP. Floor drains installed at the fire stations and hangars are conveyed through the sanitary sewer system underground piping to the WWTP (NMED, 2013).

The WWTP was constructed in 1998 and is designed to handle an average of 1.5 million gallons per day of inflow. The plant incorporates a digester tank to reduce solids, a series of aeration and clarification tanks, as well as ten sludge drying beds (NMED, 2013; Appendix C, Records of Communication).

North Playa Lake, located southeast of the WWTP, received all of Cannon AFB's sanitary and industrial wastewater from 1943 to 1966. From 1966 to 1998, wastewater on Cannon AFB was discharged directly to the former sewage lagoons (Section 3.4.1) located directly south of the WWTP. Currently, the sanitary sewer system connects to the WWTP. Raw wastewater that enters the WWTP collects in one of two lined storage basins: the main storage basin or a 9 million-gallon basin used for unsuitable material that may enter the treatment system (including AFFF).

Wastewater automatically collects in the main storage basin unless WWTP staff are informed of a release of an unsuitable material to the sanitary sewer system. In such an event, WWTP staff would cease the collection of wastewater into the main basin and divert it to the alternate “unsuitable material” basin. Wastewater in the main storage basin is continually sent to the plant’s sequencing batch reactors (SBR) for processing. Wastewater in the 9 million-gallon basin is gradually sent to the SBRs after WWTP personnel are properly prepared to handle whatever “unsuitable material” that may have been sent there (NMED, 2013; Appendix C, Records of Communication).

Currently, all treated effluent from the WWTP is released primarily to North Playa Lake with a portion released to the golf course for irrigation (Section 3.4.4). North Playa Lake is currently designated SWMU 103 and has been the site of Phase I, Phase II, and Phase III RCRA Facility Investigations as well as human health and ecological risk evaluations. The surface water from North Playa Lake is not currently used for any irrigation purposes (URS, 2011).

There is no accepted wastewater treatment process for PFCs. Any wastewater collected at the WWTP containing PFCs would be passed on to North Playa Lake. As such, a release to the environment has occurred at North Playa Lake. Photos of the WWTP and North Playa Lake are included in Appendix A.

3.4.2.2 Waste Characteristics

Any wastewater collected at the WWTP containing AFFF would be passed on to North Playa Lake. As evidenced in Section 3.1, several releases of AFFF from hangars entered the sanitary sewer system and were routed to the WWTP. There is no accepted wastewater treatment process for AFFF or PFCs.

Several investigations and sampling events have occurred at North Playa Lake, but none have focused on AFFF or PFCs.

3.4.2.3 Pathway and Environmental Hazard Assessment

A complete exposure pathway typically includes the following components: a source of contamination (an environmental medium contaminated at the source or a release mechanism by which chemicals are released from a source medium and transported), an exposure medium by which a receptor comes into contact, and a route of intake for the contaminant into the receptor’s body at the exposure point. If any of these elements are missing, the pathway is incomplete. Other release mechanisms resulting in exposure media for receptors may include the uptake of soil contaminants by plants and animals and the emission of soil contaminants into the air in association with dust particles (USEPA, 1989).

Groundwater Pathway

The basewide geologic and hydrogeologic settings, including groundwater flow, are provided in Section 1.3. The potential exists for PFC groundwater contamination at North Playa Lake as a result of historical and current wastewater disposal practices. Treated effluent discharged to North Playa Lake from the WWTP may have contained AFFF.

According to the Phase III RCRA Facility Investigation Report for North Playa Lake, excess runoff flows to playas and the presence of water in playas may allow deep percolation to the Ogallala Aquifer. Historical analytical data show that contaminant concentrations in the North Playa Lake area generally reduce significantly with depth; however, despite the depth to groundwater, percolation of water and contaminants to groundwater is possible (URS, 2011).

The primary drinking water source for Cannon AFB is groundwater extracted from the Ogallala Aquifer using seven wells located on base property. The water is disinfected with chlorine and distributed via water towers and underground pipes. The base's water system is registered as PWS ID NM3567905 and serves a population of approximately 9,284 (EDR, 2015c; Cannon AFB, 2014b).

The combined on- and off-base population within a 4-mile radius from North Playa Lake is approximately 6,540 residents (EDR, 2015a). The closest active drinking water well is Well #5 located approximately one half mile northwest of North Playa Lake (NMED, 2015). There are no residential areas located downgradient of North Playa Lake, as the land is used mainly for industrial and agricultural purposes. The nearest residential area is on base, approximately 1.75 miles northwest of North Playa Lake.

Surface Water Pathway

The land surface at North Playa Lake is flat. There are no streams or water bodies entering or exiting the lake. Water exits the lake only via evaporation and possibly via infiltration (URS, 2011). There are no water bodies adjacent to North Playa Lake (Geo Fin, 2015). The lake is not used for recreational purposes. Therefore, the surface water pathway is considered incomplete. North Playa Lake is not located within a floodplain (EDR, 2015c).

3.4.2.3.1 Soil and Air Exposure Pathways

North Playa Lake is actively used as an outfall for the WWTP at Cannon AFB. The area is restricted to authorized personnel only and there are no on-site workers or residents. Workers are present at the WWTP approximately one half mile northwest of the lake. The closest residential area is approximately 1.75 miles northwest of North Playa Lake. The potential of exposure to burrowing animals would be present.

There are no schools or daycare facilities within a 200-foot radius of North Playa Lake. The closest school is Bella Vista Elementary School located approximately 3.75 miles northeast of the lake in Clovis, New Mexico (EDR, 2015b). The closest daycare facility is a Child Development Center located on base in Building 1435, approximately 1.75 miles northwest of the lake (EDR, 2015c).

3.4.3 South Playa Lake Outfall

3.4.3.1 Description and Operational History

South Playa Lake is located in the southwestern portion of Cannon AFB and serves as the base's primary stormwater collection point. South Playa Lake is bordered by the runways to the north, by sparsely vegetated landscape to the east and west, and by several maintenance buildings to the

south (Figure 3.7). The geographic coordinates of South Playa Lake are 34°22'31.31"N Latitude and 103°19'38.03"W Longitude.

South Playa Lake is a naturally occurring 9-acre playa, approximately 15 feet at its deepest point. The lake has received stormwater runoff from portions of the flightline area since 1943. Solvents, fuels, oils, greases, and AFFF are all potential contaminants that would have discharged to the lake from the flightline area. The lake has no outlet. Surface waters flow to the center of the basin and either evaporate or percolate into the soil. The eastern third of the lake has been filled with broken concrete from apron and runway demolitions (HARZA, 1997a).

South Playa Lake is designated as SD-12 under the ERP and has been the subject of several investigations and sampling events including a records search and Phase II investigation. As outlined in Section 3.3, several releases of AFFF from hangars entered nearby storm drains and were routed to South Playa Lake. As such, a release to the environment has occurred at South Playa Lake.

3.4.3.2 Waste Characteristics

Any stormwater or wastewater containing AFFF that enters storm drains near the flightline is routed to South Playa Lake. As evidenced in Section 3.1, several releases of AFFF from hangars entered nearby storm drains and were routed to the lake.

Several investigations and sampling events have occurred at South Playa Lake, but none have focused on AFFF or PFCs.

3.4.3.3 Pathway and Environmental Hazard Assessment

A complete exposure pathway typically includes the following components: a source of contamination (an environmental medium contaminated at the source or a release mechanism by which chemicals are released from a source medium and transported), an exposure medium by which a receptor comes into contact, and a route of intake for the contaminant into the receptor's body at the exposure point. If any of these elements are missing, the pathway is incomplete. Other release mechanisms resulting in exposure media for receptors may include the uptake of soil contaminants by plants and animals and the emission of soil contaminants into the air in association with dust particles (USEPA, 1989).

Groundwater Pathway

The basewide geologic and hydrogeologic settings, including groundwater flow, are provided in Section 1.3. The potential exists for PFC groundwater contamination at South Playa Lake as a result of historical and current stormwater and wastewater disposal practices. Water in South Playa Lake only exits via evaporation or via percolation into the soil.

The primary drinking water source for Cannon AFB is groundwater extracted from the Ogallala Aquifer using seven wells located on base property. The water is disinfected with chlorine and distributed via water towers and underground pipes. The base's water system is registered as PWS

ID NM3567905 and serves a population of approximately 9,284 (EDR, 2015c; Cannon AFB, 2014b).

The combined on- and off-base population within a 4-mile radius from South Playa Lake is approximately 6,540 residents (EDR, 2015a). The closest active drinking water well is Well #7 located approximately 1.5 miles north of South Playa Lake (NMED, 2015). There are no residential areas located downgradient of South Playa Lake, as the land is used mainly for industrial and agricultural purposes. The nearest residential area is on base, approximately 1.5 miles north of South Playa Lake.

Surface Water Pathway

The land surface at South Playa Lake is flat. There are no streams or water bodies entering or exiting the lake. Water exits the lake only via evaporation and percolation (HARZA, 1997a). The lake is not used for recreational purposes. There are no water bodies adjacent to South Playa Lake (Geo Fin, 2015). Therefore, the surface water pathway is considered incomplete. South Playa Lake is not located within a floodplain (EDR, 2015c).

Soil and Air Exposure Pathways

South Playa Lake is actively used as a stormwater outfall at Cannon AFB and will continue to be used as such for the foreseeable future (HAZRA, 1997). The area is restricted to authorized personnel only, although the potential of exposure to future construction workers in the area is possible. The closest residential area is approximately 1.5 miles north of South Playa Lake. The potential of exposure to burrowing animals would be present.

There are no schools or daycare facilities within a 200-foot radius of South Playa Lake. The closest school is Bella Vista Elementary School located approximately 5.5 miles northeast of the lake in Clovis, New Mexico (EDR, 2015b). The closest daycare facility is a Child Development Center located on base in Building 1435, approximately 1.5 miles northwest of the lake (EDR, 2015b).

3.4.4 Whispering Winds Golf Course Outfall

3.4.4.1 Description and Operational History

In approximately 2002, the installation golf course (officially known as Whispering Winds Golf Course) began receiving a portion of the treated effluent from the WWTP to fill ponds and irrigate the greens. The golf course is located on the northwest corner of Cannon AFB and occupies approximately 125 acres (Figure 1.1). It is bounded to the north by the installation boundary and U.S. Highway 60, to the south and west by the base's residential area, and to the east by the base's main entrance and visitor center (Figure 3.8). The geographic coordinates of the golf course are 34°24'10.22"N Latitude and 103°19'34.98"W Longitude.

Treated effluent from the WWTP is intermittently piped to a 190,000-gallon AST located on the eastern portion of the golf course. Effluent in the storage tank is then discharged to a lined pond in the north central portion of the golf course. Effluent from both the storage tank and pond is used for irrigation purposes throughout the golf course. According to the golf course supervisor, the golf course is irrigated five nights per week for approximately four hours per night using a sprinkler

system. The sprinkler system has a maximum output of 900 gallons per minute (NMED, 2013; Appendix C, Records of Communication).

There is no accepted wastewater treatment process for AFFF. Any wastewater collected at the WWTP containing AFFF would be passed on to the golf course. As such, a release to the environment has occurred at the golf course.

3.4.4.2 Waste Characteristics

The golf course began receiving effluent from the WWTP plant in approximately 2002. Currently, the golf course stores effluent in a 190,000-gallon tank on the eastern portion of the course as well as in a lined pond. Effluent is regularly used at the golf course for irrigation.

A release of AFFF into any of the hangar floor trenches or fire station stalls would be routed through the WWTP. As such, effluent from the WWTP used at the golf course may contain AFFF.

3.4.4.3 Pathway and Environmental Hazard Assessment

A complete exposure pathway typically includes the following components: a source of contamination (an environmental medium contaminated at the source or a release mechanism by which chemicals are released from a source medium and transported), an exposure medium by which a receptor comes into contact, and a route of intake for the contaminant into the receptor's body at the exposure point. If any of these elements are missing, the pathway is incomplete. Other release mechanisms resulting in exposure media for receptors may include the uptake of soil contaminants by plants and animals and the emission of soil contaminants into the air in association with dust particles (USEPA, 1989).

Groundwater Pathway

The basewide geologic and hydrogeologic settings, including groundwater flow, are provided in Section 1.3. The potential exists for PFC groundwater contamination at the golf course as a result of current irrigation practices. Treated effluent sent to the golf course from the WWTP may contain AFFF and is used to irrigate the course. The possibility of percolation into the groundwater exists.

The primary drinking water source for Cannon AFB is groundwater extracted from the Ogallala Aquifer using seven wells located on base property. The water is disinfected with chlorine and distributed via water towers and underground pipes. The base's water system is registered as PWS ID NM3567905 and serves a population of approximately 9,284 (EDR, 2015c; Cannon AFB, 2014b).

The combined on- and off-base population within a 4-mile radius from Whispering Winds Golf Course is approximately 6,540 residents (EDR, 2015a). There are two active drinking water wells on the golf course: Well numbers 2 and 8 (Figure 3.8) (NMED, 2015). There are no residential areas located downgradient of the golf course, as the land is used mainly for industrial and agricultural purposes. The nearest residential area is on base, directly west of the golf course.

Surface Water Pathway

The land surface at the golf course is flat. There are no streams or water bodies entering or exiting the golf course or its effluent pond. There are no water bodies adjacent to the golf course (Geo Fin, 2015). Therefore, the surface water pathway is considered incomplete. Whispering Winds Golf Course is not located within a floodplain (EDR, 2015a).

3.4.4.4 Soil Exposure and Air Pathways

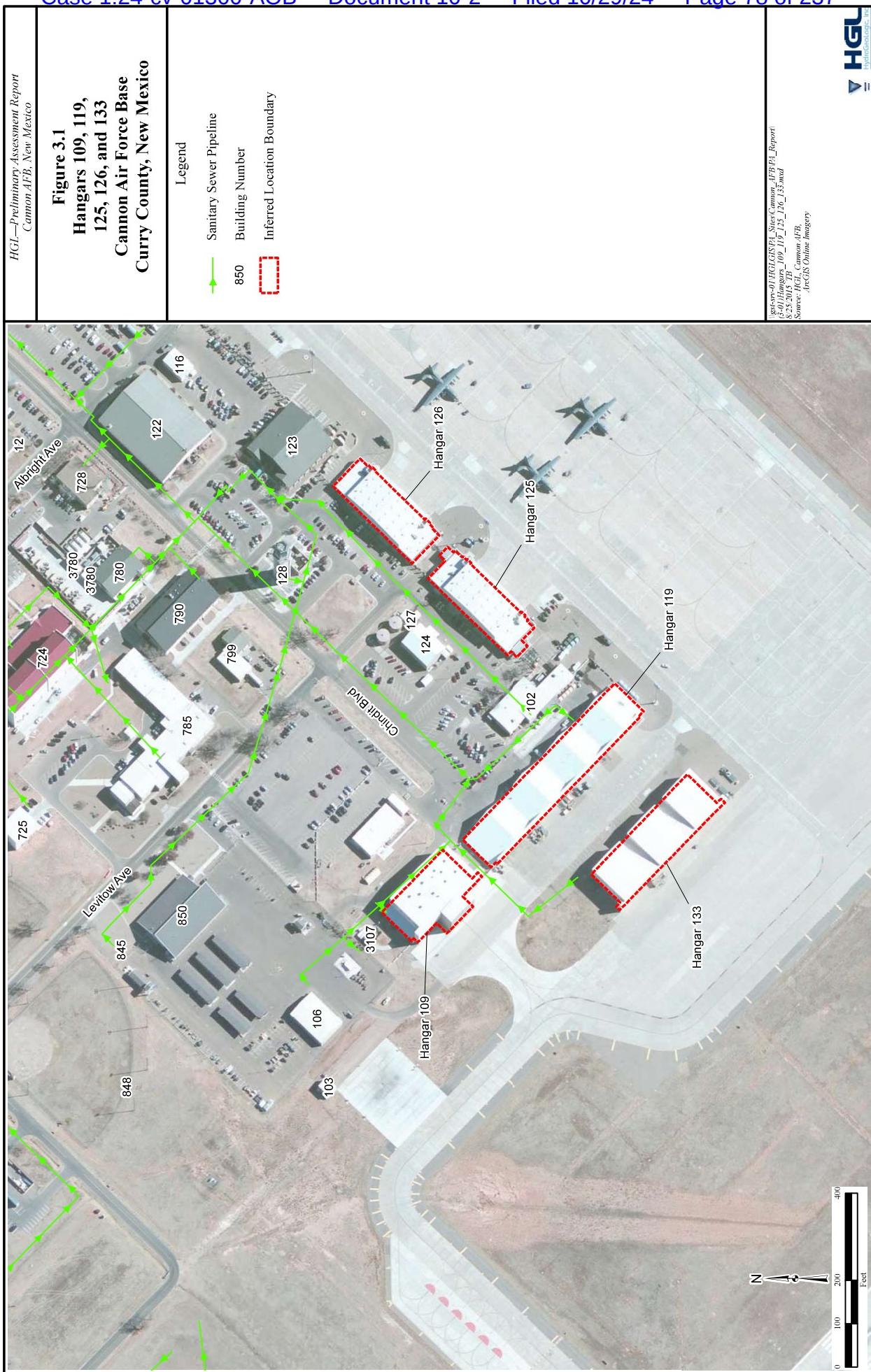
The golf course is active with several on-site workers and visitors. The closest residential area is directly south of the golf course. The potential of human exposure to soil treated with contaminated effluent would be possible.

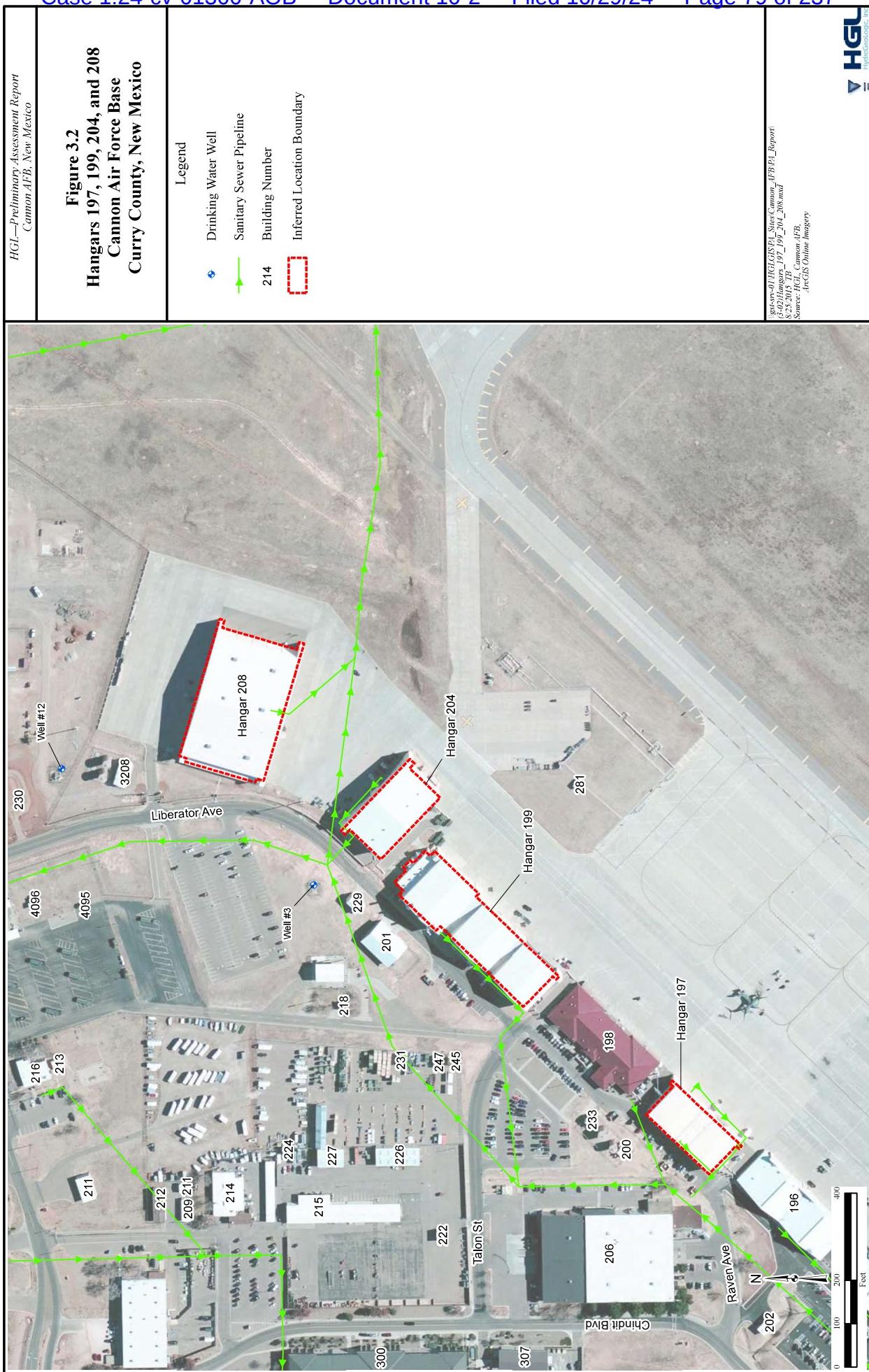
There are no schools or daycare facilities within a 200-foot radius of the golf course. The closest school is Bella Vista Elementary School located approximately five miles northeast of the golf course in Clovis, New Mexico (EDR, 2015b). The closest daycare facility is a Child Development Center located on base in Building 1435, approximately 1,000 feet south of the golf course.

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FIGURES

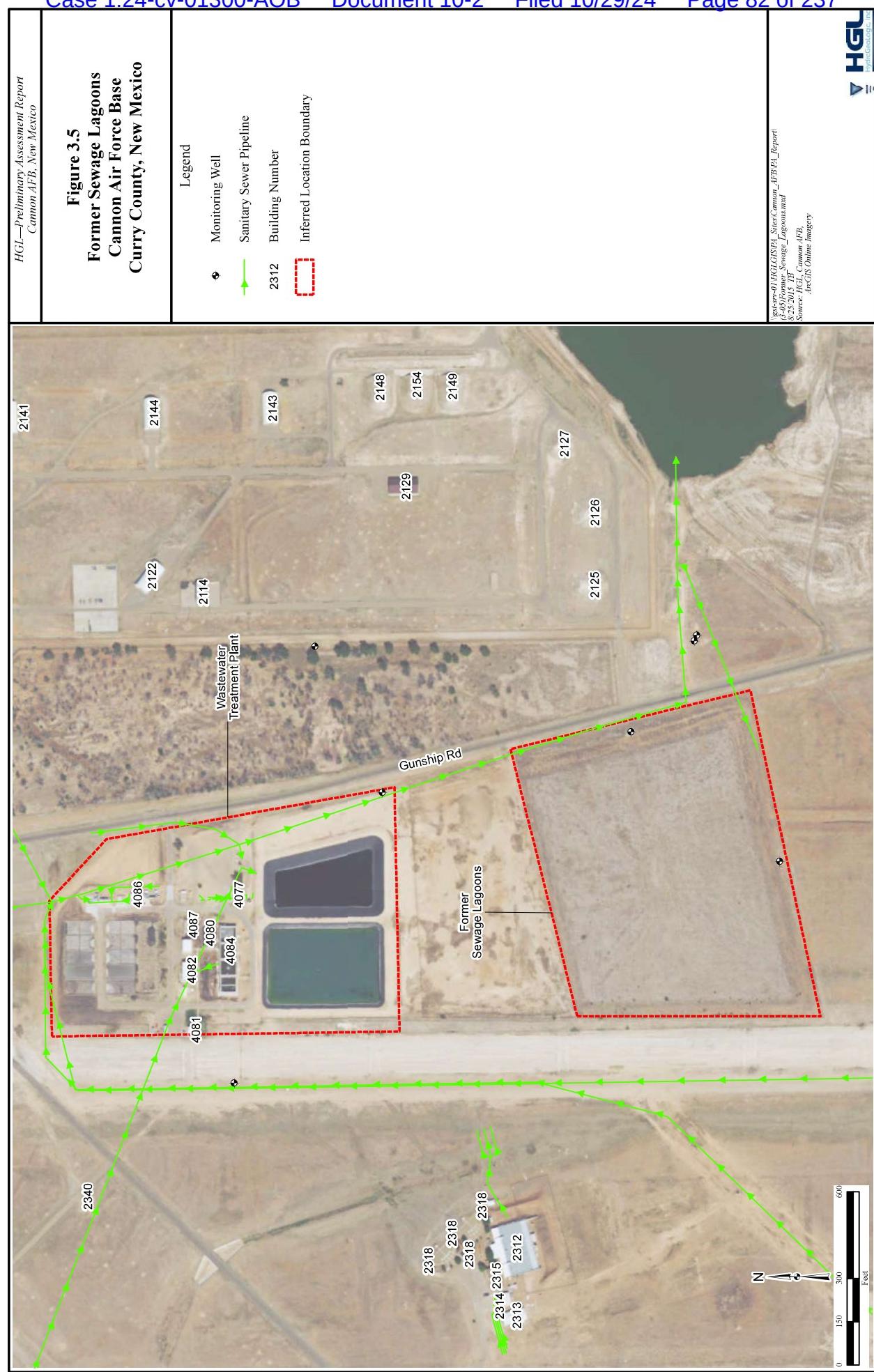
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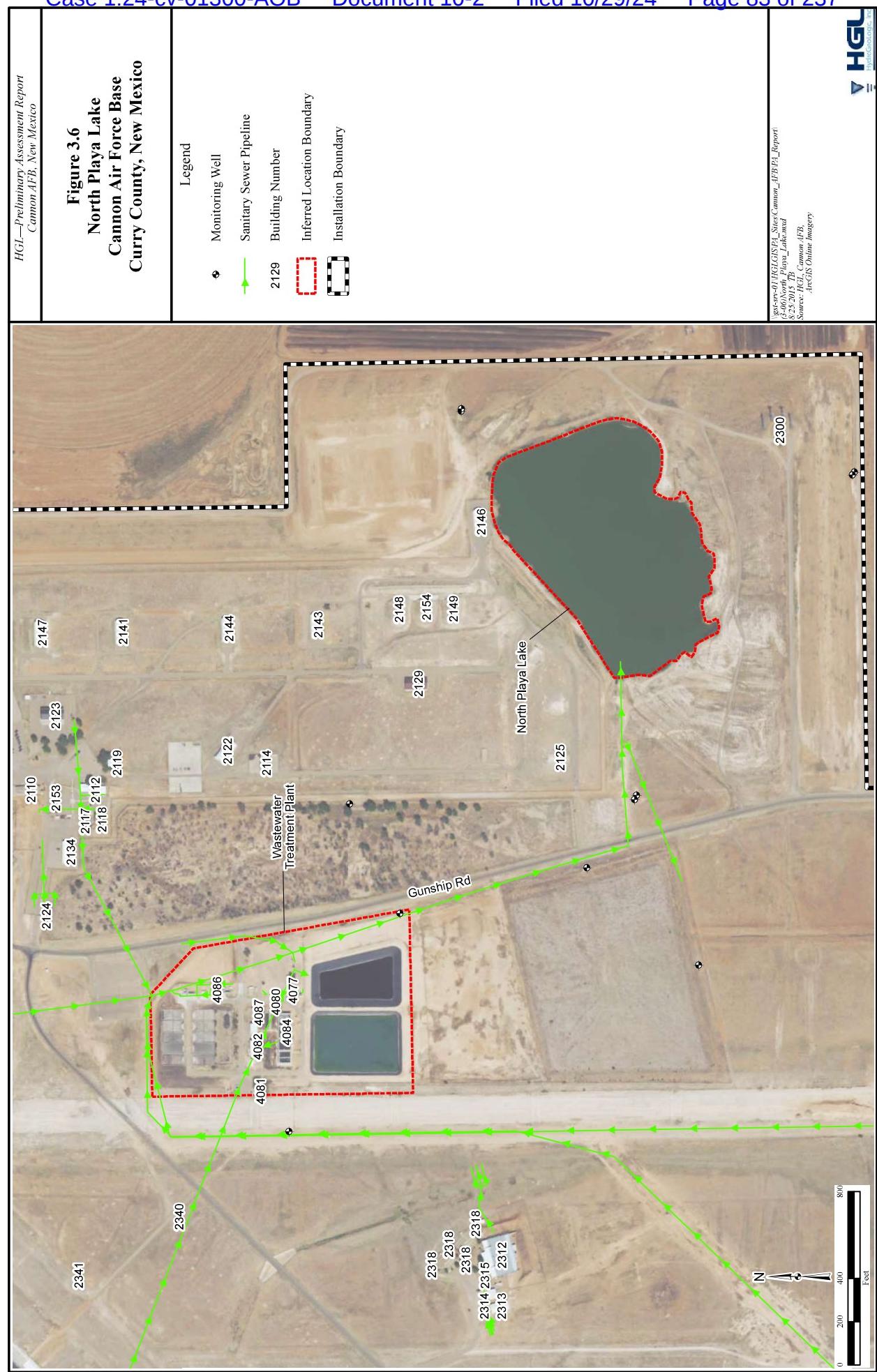


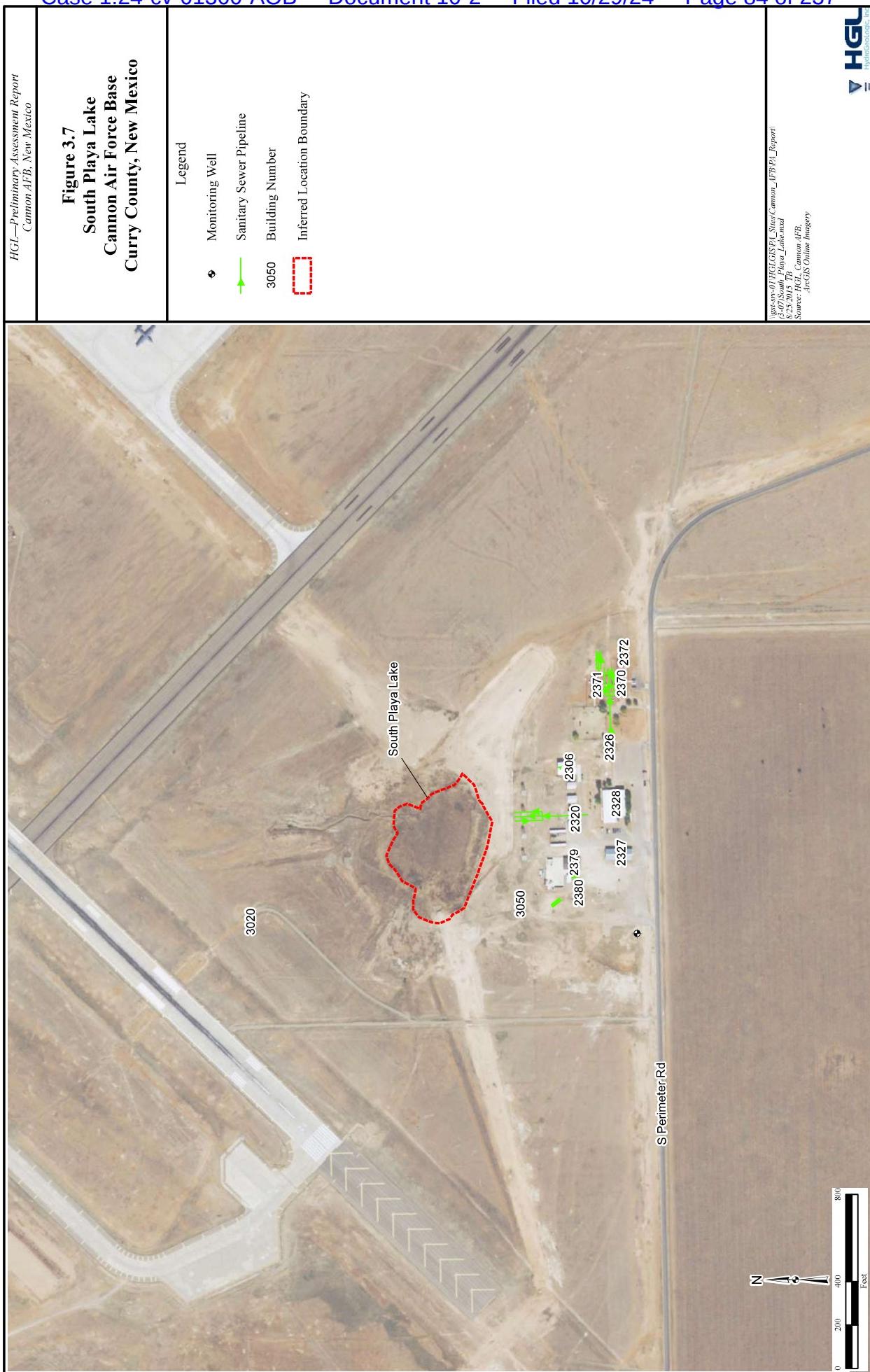












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Cannon AFB, New Mexico*

Figure 3.8
Whispering Winds Golf Course
Cannon Air Force Base
Curry County, New Mexico



4.0 SUMMARY AND CONCLUSIONS

4.1 SUMMARY

4.1.1 Fire Training Areas

4.1.1.1 Former Fire Training Areas

There are four former FTAs present at Cannon AFB: FT-06, FT-07, FT-08, and FTA-4. The oldest FTA, FT-06, ceased operating before initial use of AFFF by the Air Force in 1970. FT-07, FT-08, and FTA-4 were all operational during or after 1970, and the Cannon AFB Fire Department likely used AFFF at those FTAs during fire training exercises. The exact quantity of AFFF used at the former FTAs is unknown. However, the exercise areas and runoff pits at the former FTAs were all unlined. As such, any substances used there would have likely permeated into the soil. Several investigations and remedial actions have occurred at the former FTAs, but none have focused on AFFF or PFCs.

There is a potential for PFC contamination to the environmental media at FT-07, FT-08, and FTA-4.

4.1.1.2 Active Fire Training Area

Cannon AFB currently has one operating FTA with a lined burn pit, a mock aircraft, a propane fuel tank, a control tower, and a lined evaporation pond. The burn pit is used for monthly aircraft fire response training as well as annual vehicle foam spray tests. The amount of AFFF used at the active FTA varies depending on the exercise or vehicle being tested. Typically, AFFF is sprayed from vehicles into the burn pit until there is a consistent spray pattern. Liquids discharged into the burn pit, including water and AFFF, drain to a lined evaporation pond at the FTA. There was no available documentation or evidence of a release of AFFF to the environment from the lined containment system at the time of the assessment.

4.1.2 Non-Fire Training Areas

4.1.2.1 Hangars

There are nine hangars at Cannon AFB that are equipped with (or have previously been equipped with) AFFF fire suppression systems. There are documented releases of AFFF at all nine of these hangars. However, most of the AFFF releases entered floor trenches in hangar bays or storm drains on the concrete aprons near the hangars. Floor trenches in hangar bays connect to the sanitary sewer system and routed to the former sewage lagoons prior to the construction of the WWTP in 1998. Any liquid that has entered the floor trenches after 1998 has been routed to the WWTP. The storm drains outside of the hangars connect directly to South Playa Lake, the base's primary stormwater outfall. With the exception of one event, all releases of AFFF at these hangars entered the sanitary sewer system or stormwater drainage system.

Records show that a release of AFFF in July 2001 at Hangar 133 was washed to nearby soil and may have been released to the environment. Likewise, three separate discharges of AFFF at

Hangars 119 and 204 from May 2002 to July 2013 may have been left uncontained on nearby asphalt or concrete flight ramps. As such, AFFF may have permeated soil near Hangars 119 and 204 and been released to the environment.

With the exception of Hangars 119, 133, and 204, the environmental media at the hangars summarized in Section 3.1 have not been impacted by PFCs.

4.1.2.2 Fire Stations

Cannon AFB has one active fire station with vehicles and trailers that contain AFFF. A bench stock supply of AFFF is regularly stored on the stall floors and in a supply closet near the stalls with spill-containment mechanisms in place. Daily operational checks, monthly time and distance testing, and hose washouts for all firefighting vehicles at the current fire station are conducted on the concrete ramp north of the fire station using water. Annual foam checks for vehicles stored at the station are conducted at the active FTA. Refilling activities for AFFF are conducted in station stalls using dedicated transfer pumps.

The former fire station, which operated until 2005, had nearly identical procedures to the active fire station. However, AFFF was stored in an outdoor closet. The former fire station also had an OWS that connected to the sanitary sewer system.

There was no available documentation or evidence to suggest that the environmental media surrounding the current or former fire stations were impacted by PFCs.

4.1.2.3 Emergency Response

According to a records query and personal interviews, the Cannon AFB Fire Department has not responded to any fire emergencies requiring the application of AFFF to suppress fires.

4.1.2.4 Other

Currently, there is no accepted wastewater treatment process for AFFF. Any wastewater collected at the WWTP containing AFFF would have been passed on to the discharge locations associated with the WWTP. Both of the outfall discharge locations (North Playa Lake and the golf course) have the potential to have released AFFF.

Prior to the WWTP construction in 1998, wastewater generated at Cannon AFB was discharged directly to the former sewage lagoons. Currently, effluent from the WWTP is discharged primarily into North Playa Lake with a portion also being discharged to the Whispering Winds Golf Course for distribution throughout the golf course. All areas are potential AFFF release locations.

Additionally, South Playa Lake has received stormwater runoff from portions of the flightline area since 1943. Solvents, fuels, oils, greases, and AFFF are all potential contaminants that would have discharged to the lake from the flightline area.

The potential exists for PFC contamination to the environmental media at the former Sewage Lagoons, North Playa Lake Outfall, South Playa Lake Outfall, and the Whispering Winds Golf Course Outfall.

4.2 CONCLUSIONS

Table 4.1 summarizes the findings from this PA report and presents possible future location management decisions. The identified locations are categorized by “group” in Table 4.1 as follows:

- Group 1 – High mass of AFFF released and probability of groundwater contamination.
- Group 2 – Unknown mass or medium mass of AFFF released.
- Group 3 – Low mass of AFFF released.
- Group 4 – No AFFF released.

Based on the “group” designation and rationale for each location, recommendations are provided in Table 4.1. In accordance with the EPA CERCLA Preliminary Assessment and Site Inspections Guidance documents, each of the identified locations is either recommended for: Implement removal action due to imminent threat; close out of location due to no release; Initiate a Remedial Investigation; or Initiate a Site Inspection.

- Removal action, as defined in CERCLA Section 104, are actions taken to eliminate, control, or otherwise mitigate a threat posed to public health or the environment due to a release or threatened release of hazardous substances (USEPA, 1991).
- Close out or no further remedial action planned is defined as a site disposition decision that further response under the Federal Superfund is not necessary (USEPA, 1991).
- Remedial Investigation is defined as a field investigation to characterize the nature and extent of contamination at a site. The Remedial Investigation supports development, evaluation, and selection of the appropriate response alternative (USEPA, 1991).
- Site Inspection is defined as an investigation to collect and analyze waste and environmental samples to support a site evaluation (USEPA, 1992).

Table 4.1
Preliminary Assessment Report Summary and Findings

Locations	Group	Rationale	Recommendation
Former FTA No. 1 (FT-06)	Group 4	<ul style="list-style-type: none"> • Operated from approximately 1959 to 1968. • Fire training activities conducted on unlined burn pit. • Ceased operations before initial use of AFFF by the Air Force in 1970. 	Close-out with no additional investigation.
Former FTA No. 2 (FT-07)	Group 2	<ul style="list-style-type: none"> • Operated from 1968 to 1974. • JP-4 was the only fuel burned at this site, with approximately 300 gallons used per exercise (twice per quarter). • Exercises were conducted at two unlined depressions. • No specific records of AFFF use at FT-07, but the area was operational after initial use of AFFF by the Air Force in 1970. • Records show that FTA procedures at Cannon AFB since approximately 1970 have been to “extinguish with AFFF.” 	Initiate a Site Inspection.
Former FTA No. 3 (FT-08)	Group 2	<ul style="list-style-type: none"> • Operated from 1968 to 1974. • JP-4 was the only fuel burned at this site, with approximately 300 gallons used per exercise (twice per quarter). • Exercise area was unlined. 	Initiate a Site Inspection.
Former FTA No. 4 (FTA-4)	Group 2	<ul style="list-style-type: none"> • No specific records of AFFF use at FT-08, but the area was operational after initial use of AFFF by the Air Force in 1970. • Records show that FTA procedures at Cannon AFB since approximately 1970 have been to “extinguish with AFFF.” • Operated from approximately 1974 to 1995. • Exercises were conducted twice per quarter using commingled waste oils, solvents, and recovered JP-4 fuel. • Prior to 1985, runoff generated during exercises at FTA-4 collected in an unlined pit. • The unlined pit was backfilled in 1985 and a new, lined pit with an OWS was installed to handle collected runoff. • No specific records of AFFF use at FTA-4, but the area was operational after initial use of AFFF by the Air Force in 1970. • Records show that FTA procedures at Cannon AFB since approximately 1970 have been to “extinguish with AFFF.” 	Initiate a Site Inspection.
Active FTA	Group 4	<ul style="list-style-type: none"> • Fire training activities conducted on lined burn pit which drains to a lined evaporation pond. • AFFF use at the Active FTA is contained with no release. • No reported or documented release of AFFF. 	Close-out with no additional investigation.

Table 4.1 (Continued)
Preliminary Assessment Report Summary and Findings

Locations	Group	Rationale	Recommendation
Hangars Never Equipped with AFFF	Group 4	<ul style="list-style-type: none"> • Hangars 173, 174, 194, 195, 196, 4605, 4606, 4607, 4608, 4609, and 4610 have never been equipped with AFFF fire suppression systems. • Hangars are currently equipped with HEF and/or wet sprinkler systems. • No reported or documented release of AFFF at these hangars. 	Close-out with no additional investigation.
Hangar 109	Group 4	<ul style="list-style-type: none"> • Hangar presently equipped with AFFF. • AFFF discharge would be captured by a floor trench in hangar bay or by a storm drain on the concrete ramp outside of the hangar. • In December 2009, an AFFF release was captured by a floor trench and routed to the WWTP via the sewer system. 	Close-out with no additional investigation.
Hangar 119	Group 3	<ul style="list-style-type: none"> • Hangar presently equipped with AFFF. • AFFF discharge would be captured by storm drains on the concrete ramps outside of the hangar. • There are three documented discharges of AFFF: one entered a nearby storm drain and was routed to South Playa Lake, while two (onto nearby asphalt and flight ramp) may have been left to evaporate and left uncontained. • Uncontained discharges of AFFF had the potential to migrate to nearby grassy areas south and southwest of Hangar 119. 	Initiate a Site Inspection.
Hangar 125	Group 4	<ul style="list-style-type: none"> • Hangar presently equipped with AFFF. • AFFF discharge would be captured by a floor trench in hangar bay or by a storm drain on the concrete ramp outside of the hangar. • In September 2002, an AFFF release was captured by a floor trench and routed to the WWTP via the sewer system. • There have been no reported or documented releases of AFFF at the hangar. 	Close-out with no additional investigation.
Hangar 126	Group 4	<ul style="list-style-type: none"> • Hangar presently equipped with AFFF. • AFFF discharge would be captured by a floor trench in hangar bay or by a storm drain on the concrete ramp outside of the hangar. • In November 2000, an AFFF release was captured by a floor trench and routed to the WWTP via the sewer system. • There have been no reported or documented releases of AFFF at the hangar. 	Close-out with no additional investigation.
Hangar 133	Group 2	<ul style="list-style-type: none"> • Hangar presently equipped with AFFF. • AFFF discharge would be captured by a floor trench in hangar bay or by a storm drain on the concrete ramp outside of the hangar. • In July 2001, 200 gallons of AFFF were released, and some was washed to nearby soil. 	Initiate a Site Inspection.

Table 4.1 (Continued)
Preliminary Assessment Report Summary and Findings

Locations	Group	Rationale	Recommendation
Hangar 197	Group 4	<ul style="list-style-type: none"> • Hangar presently equipped with AFFF. • AFFF discharge would be captured by a floor trench in hangar bay or by a storm drain on the concrete ramp outside of the hangar. • Release of AFFF in December 2000 entered a storm drain and would have routed to South Playa Lake. • Release of AFFF in April 2005 may have entered a floor trench and been routed to the WWTP. • There have been no reported or documented releases of AFFF at the hangar. • Hangar presently equipped with HEF, but was equipped with AFFF from 1992 to 1999. • AFFF discharge would be captured by a floor trench in hangar bay or by a storm drain on the concrete ramp outside of the hangar. • Three AFFF releases from June 1994 to June 1996 may have entered storm drains or floor trenches and been routed to South Playa Lake or the former sewage lagoons. • There have been no reported or documented releases of AFFF at the hangar. • Hangar presently equipped with AFFF. • AFFF discharge would be captured by a floor trench in hangar bay or by a storm drain on the concrete ramp outside of the hangar. • A discharge of AFFF in May 2002 entered the nearby concrete ramp and was reportedly left to evaporate. • Uncontained discharges of AFFF had the potential to migrate to nearby grassy areas south and east of Hangar 204. • Hangar presently equipped with HEF, but was equipped with AFFF from 1995 to 2013. • AFFF discharge would be captured by a floor trench in hangar bay or by a storm drain on the concrete ramp outside of the hangar. • Four AFFF releases in 1998 entered the sanitary sewer system and would have been routed to either the former sewage lagoons or the WWTP. • There have been no reported or documented releases of AFFF at the hangar. • Any Time & Distance testing at the station is conducted using water. • Hose wash-outs occur on concrete ramp near station. • Equipment is refilled with AFFF in station stalls. • Stall floor drains connect to sewer system, which drains to WWTP. • Bench stock of AFFF is stored at the station, but secondary containment is in place. • Vehicle/equipment tests using AFFF occur at Active FTA. • No evidence or record of any spill/release of AFFF. 	<p>Close-out with no additional investigation.</p> <p>Close-out with no additional investigation.</p> <p>Initiate a Site Inspection.</p> <p>Close-out with no additional investigation.</p> <p>Close-out with no additional investigation.</p>
Hangar 199	Group 4		
Hangar 204	Group 3		
Hangar 208	Group 4		
Current Fire Station	Group 4		

Table 4.1 (Continued)
Preliminary Assessment Report Summary and Findings

Locations	Group	Rationale	Recommendation
Former Fire Station	Group 4	<ul style="list-style-type: none"> No evidence or records of a release of AFFF to the environment. Any Time & Distance testing at the station was conducted using water. Equipment was refilled with AFFF in station stalls. Hose wash-outs occurred in a large closet near station stalls. Stall floor drain connected to an OW/S and eventually the sewer system, which drained to the former sewage lagoons or the WWTP. Bench stock of AFFF was stored at the station, but it is unclear if secondary containment was in place. Vehicle/equipment tests using AFFF were conducted at Active FTA. No evidence or record of any spill/release of AFFF. No evidence or records of a release of AFFF to the environment. 	Close-out with no additional investigation.
Former Sewage Lagoons	Group 2	<ul style="list-style-type: none"> Prior to WWTP construction in 1998, all wastewater from Cannon AFB was discharged to these lagoons. There are documented releases of AFFF to the sanitary sewer system from Hangars 199 and 208 prior to and during 1998. 	Initiate a Site Inspection.
North Playa Lake Outfall	Group 2	<ul style="list-style-type: none"> Primary discharge point for effluent from WWTP. Effluent from the WWTP may contain AFFF. 	Initiate a Site Inspection.
South Playa Lake Outfall	Group 2	<ul style="list-style-type: none"> Primary discharge point for storm drains located near hangars equipped with AFFF. There is evidence of multiple releases of AFFF into storm drains from hangars. 	Initiate a Site Inspection.
Whispering Winds Golf Course Outfall	Group 2	<ul style="list-style-type: none"> Beginning in approximately 2002, the golf course began receiving a portion of effluent from the WWTP for irrigation purposes. Effluent from the WWTP may contain AFFF. 	Initiate a Site Inspection.

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APPENDIX A
PHOTO DOCUMENTATION

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Photo 1 (7/6/2015)- Southwest facing view of active FTA showing mock aircraft and propane fuel tank.



Photo 2 (7/6/2015)- Southeast facing view of active FTA showing the control tower.



Photo 3 (7/6/2015)- View of bench stock supply of 3% AFFF concentrate stored at current fire station.



Photo 4 (7/6/2015)- View of vehicle stored in stall at current fire station.



Photo 5 (7/6/2015)- View of vehicle stored in stall at current fire station.

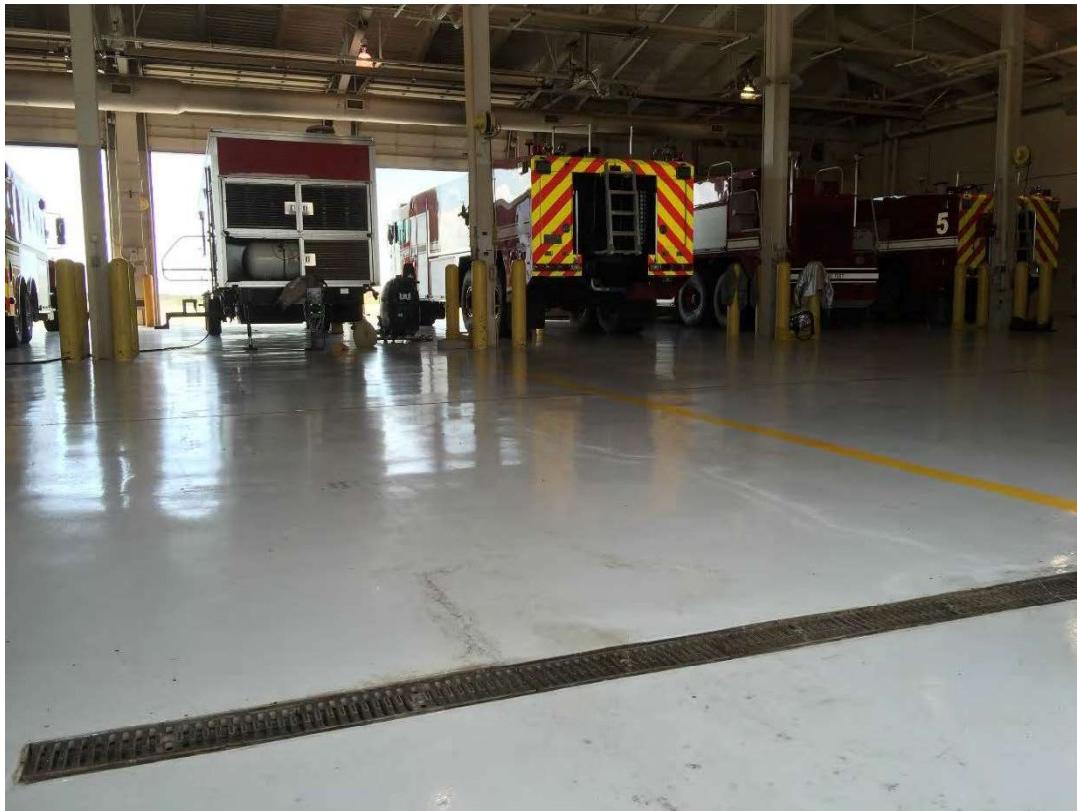


Photo 6 (7/6/2015)- View of floor drain and vehicles at the current fire station.



Photo 7 (7/6/2015)- View of 1,000-gallon foam trailer and transfer pump stored at the current fire station.



Photo 8 (7/6/2015)- View of 55-gallon drum of 3% AFFF concentrate stored in spill-containment pack on stall floor at current fire station.



Photo 9 (7/6/2015)- View of additional 55-gallon drum of 3% AFFF concentrate in spill-containment pack stored on stall floor at current fire station.



Photo 10 (7/6/2015)- View of additional floor drain and vehicles at the current fire station.



Photo 11 (7/6/2015)- North facing view of storm drains on concrete ramp north of current fire station, where hose wash-outs and Time & Distance testing occurs.



Photo 12 (7/6/2015)- Southeast facing view of 9 million gallon basin for unsuitable material at wastewater treatment plant.



Photo 13 (7/6/2015)- Southeast facing view of North Playa Lake, an outfall for the wastewater treatment plant.

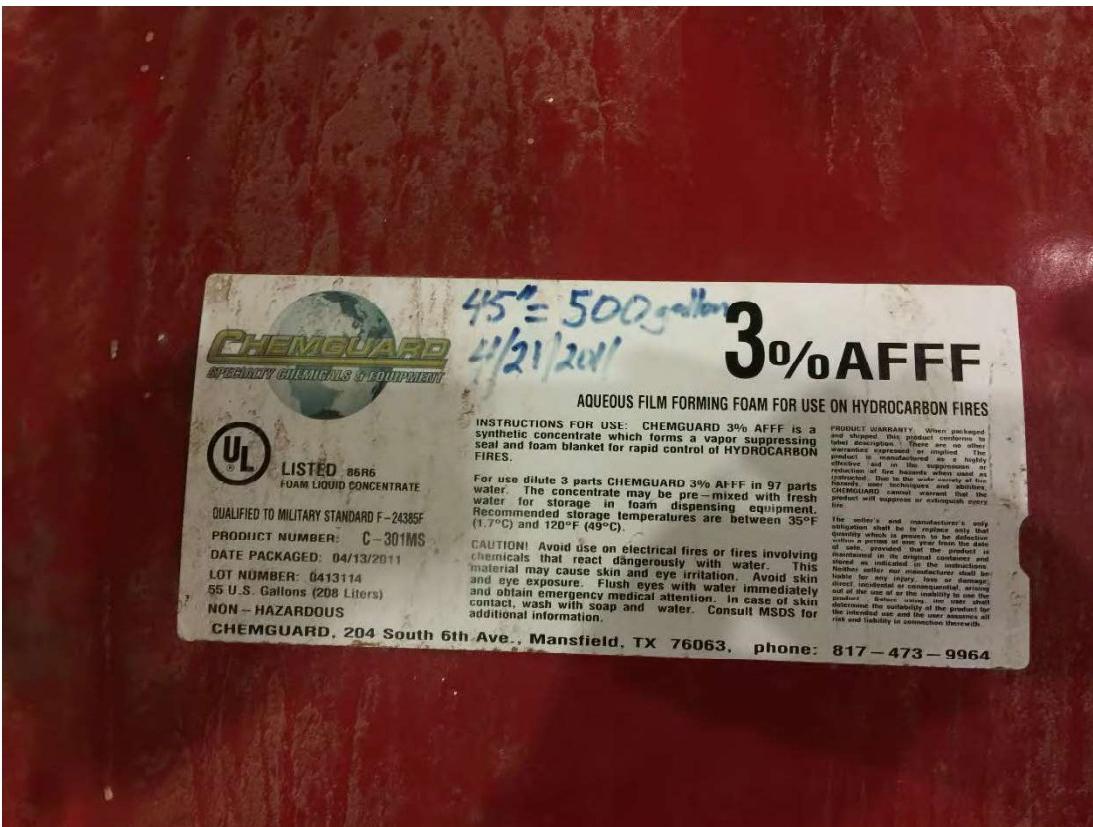


Photo 14 (7/7/2015)- View of information card on 500-gallon AFFF tank in mechanical room of Hangar 119.



Photo 15 (7/7/2015)- View of piping in Hangar 119 mechanical room.

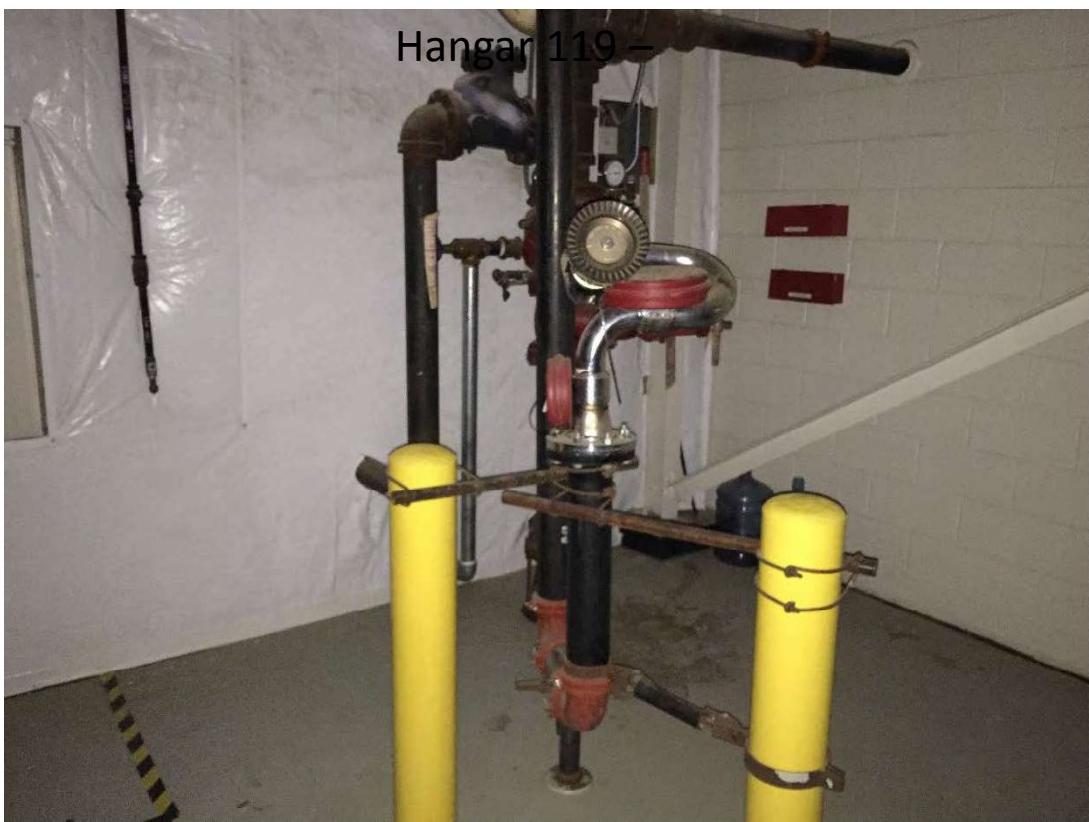


Photo 16 (7/7/2015)- View of floor/underwing AFFF nozzle cannon in Hangar 119.

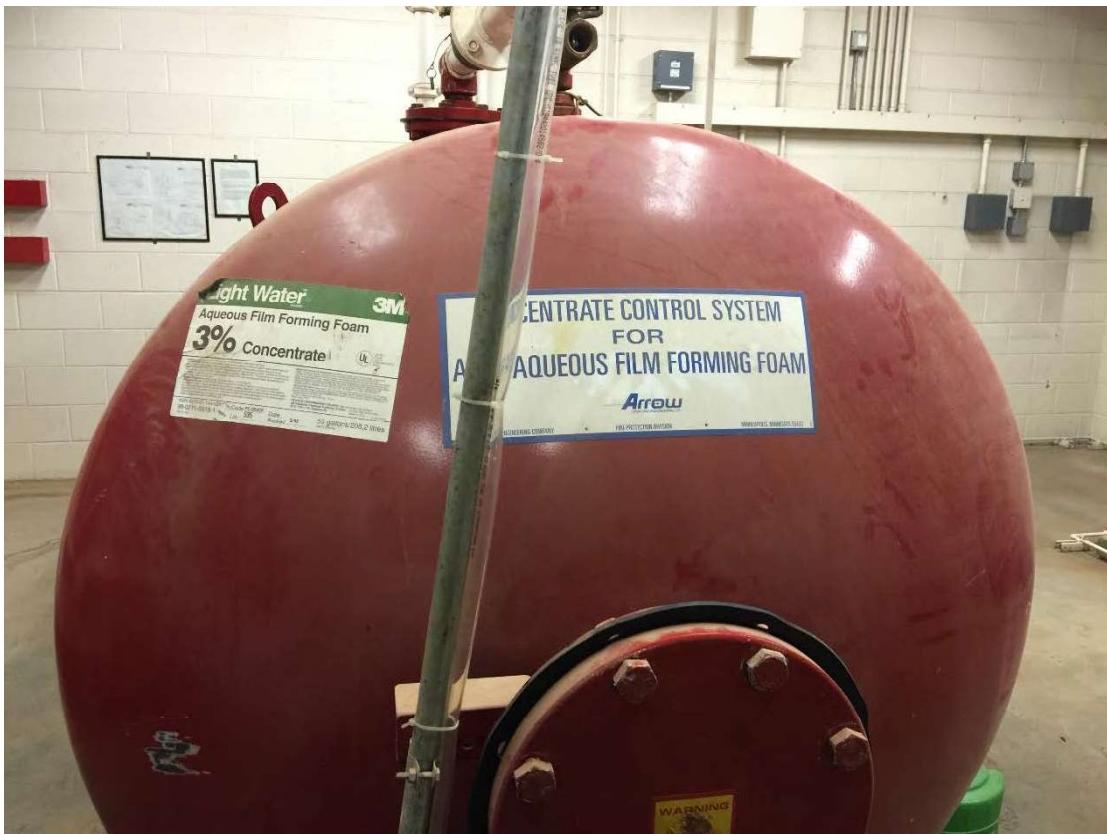


Photo 17 (7/7/2015)- View of 1,000-gallon AFFF tank and distribution piping in mechanical room of Hangar 133.

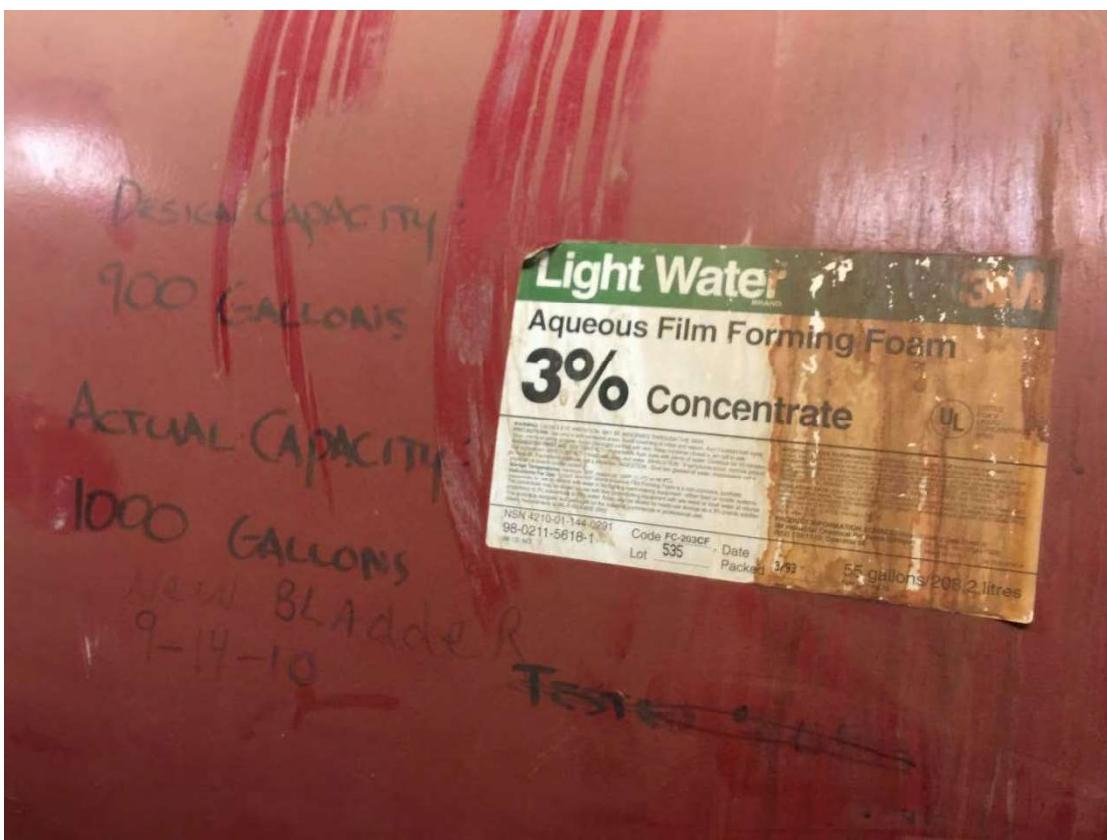


Photo 18 (7/7/2015)- View of information card and handwritten notes on 1,000-gallon AFFF tank in mechanical room of Hangar 133.



Photo 19 (7/7/2015)- View of additional information card on AFFF tank in Hangar 133 mechanical room.

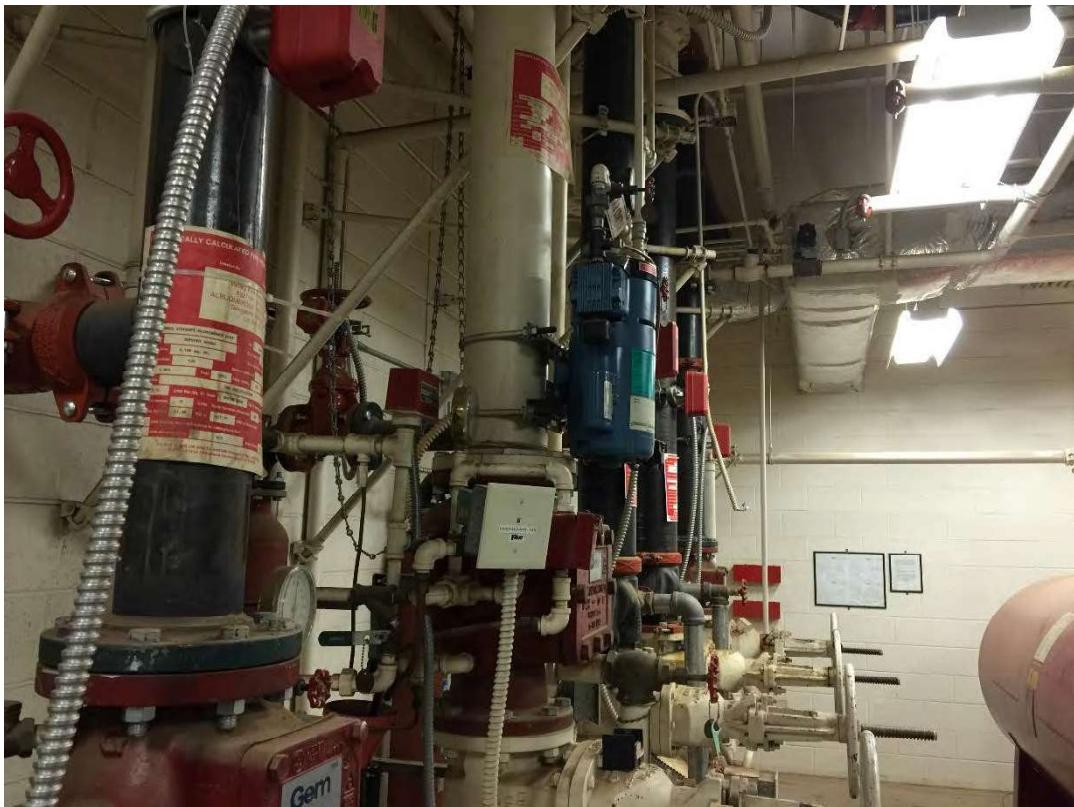


Photo 20 (6/2/2015)- View of AFFF tank and associated distribution piping in mechanical room of Hangar 133.



Photo 21 (7/7/2015)- View of floor trench and foam activation switch (on far wall) at Hangar 133.

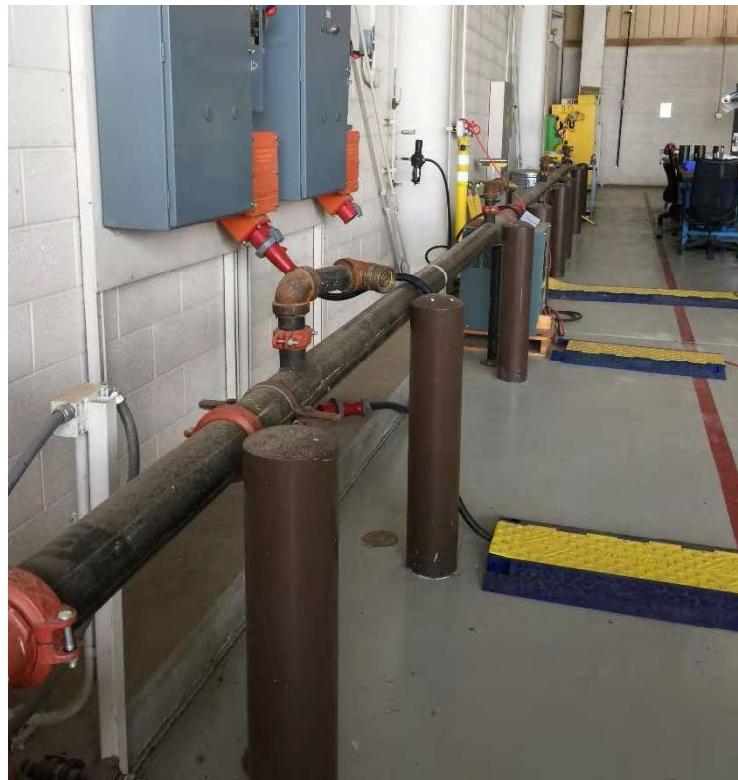


Photo 22 (7/7/2015)- View of underwing AFFF cannons at Hangar 133.

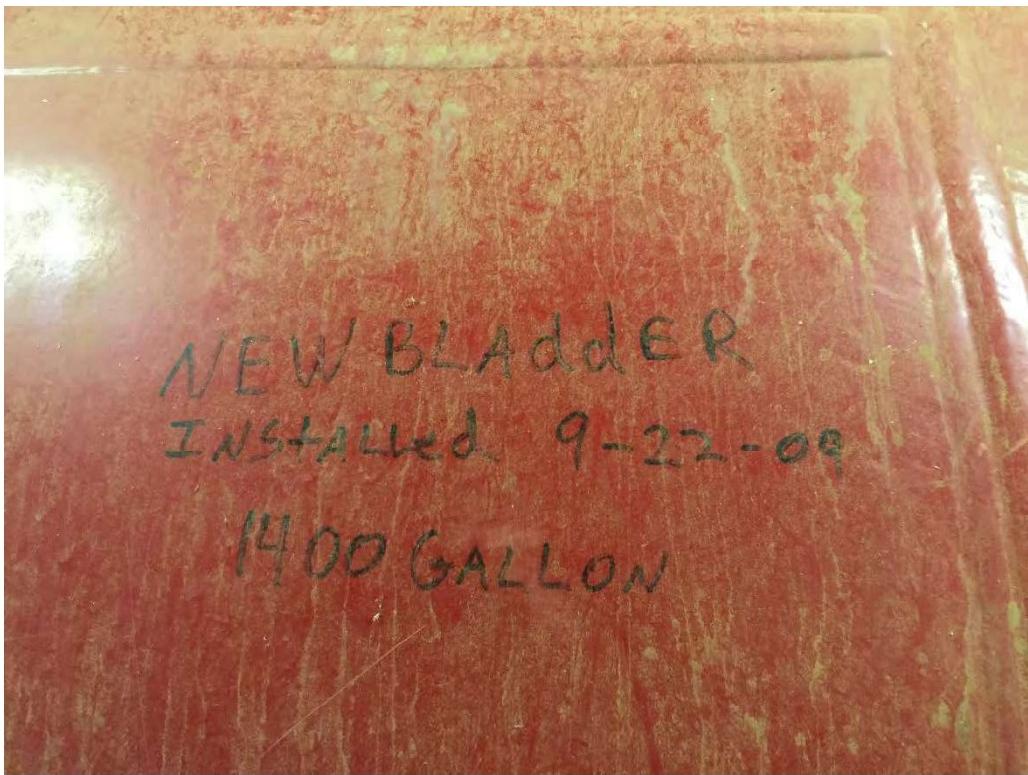


Photo 23 (7/7/2015)- View of handwritten information on 1,400-gallon AFFF tank in Hangar 109 mechanical room.

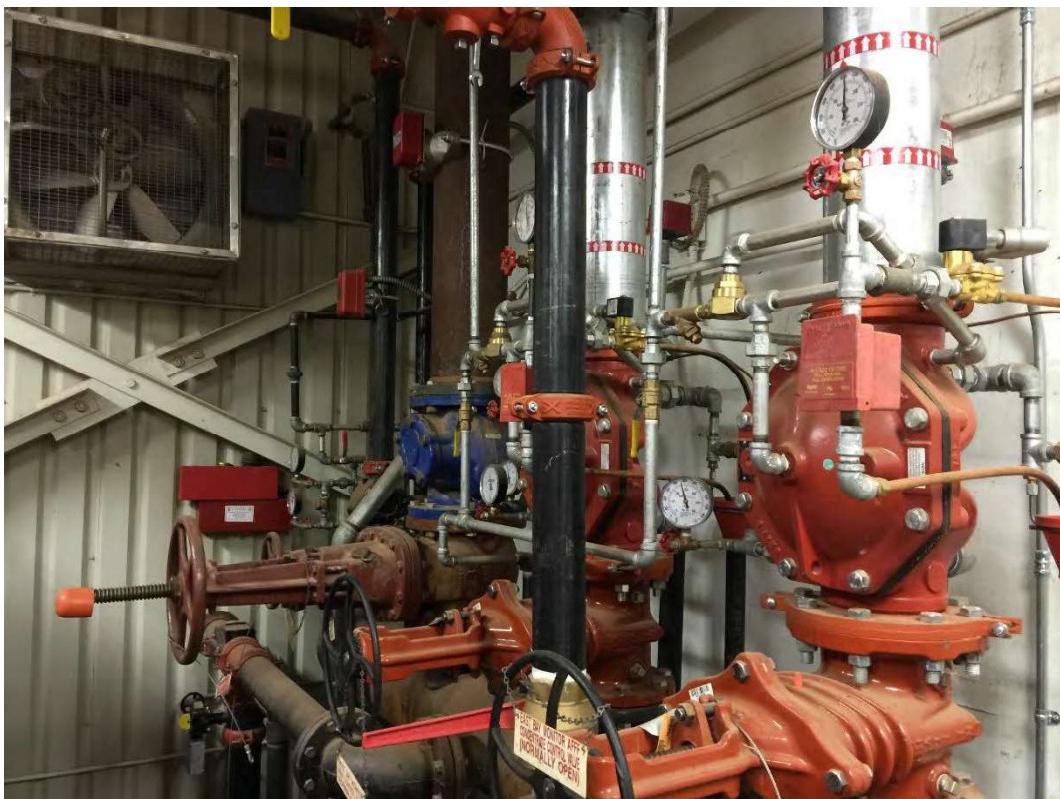


Photo 24 (7/7/2015)- View of AFFF distribution piping in Hangar 109 mechanical room.



Photo 25 (7/7/2015)- View of underwing AFFF cannon, floor trench, and foam system activation button at Hangar 109.

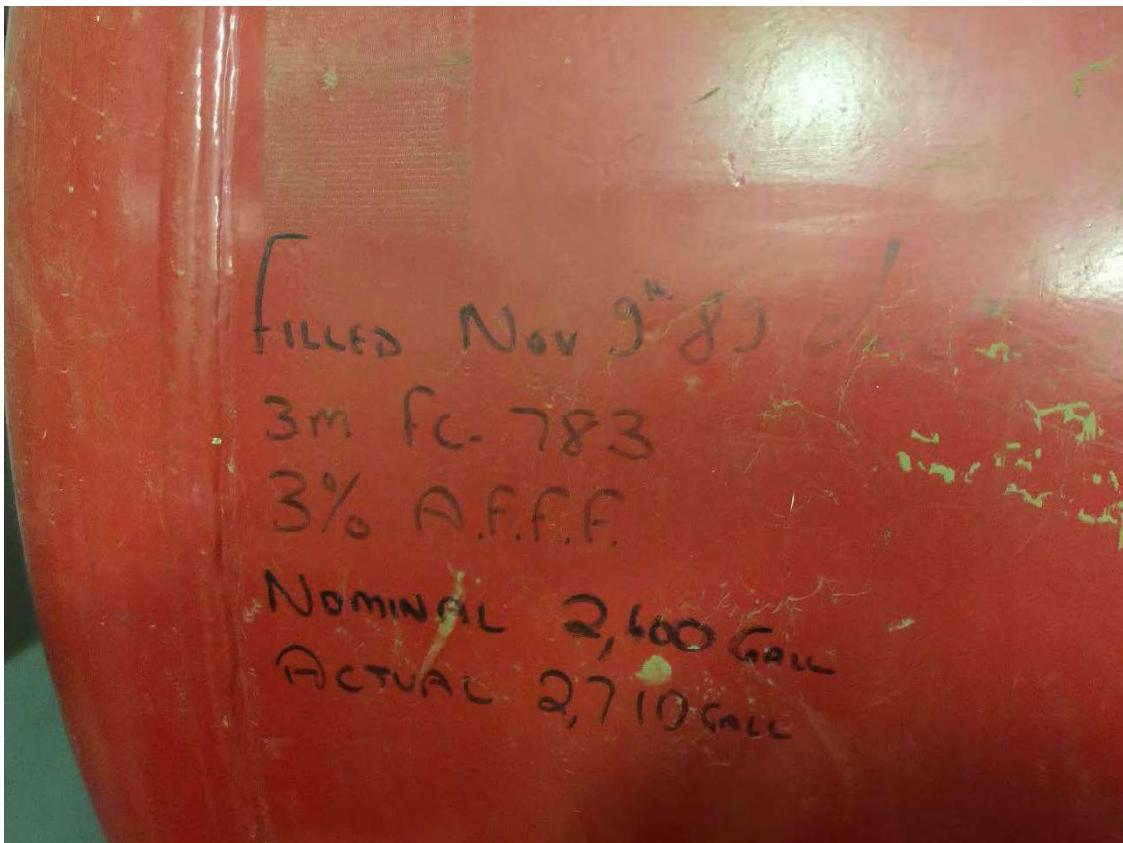


Photo 26 (7/7/2015)- View of handwritten information on AFFF tank at Hangar 125 mechanical room.



Photo 27 (7/7/2015)- View of information card on AFFF tank at Hangar 125 mechanical room.



Photo 28 (7/7/2015)- View of AFFF distribution piping at Hangar 125 mechanical room.



Photo 29 (7/7/2015)- View of 2,600-gallon AFFF tank at Hangar 126 mechanical room.



Photo 30 (7/7/2015)- View of AFFF distribution piping at Hangar 126 mechanical room.



Photo 31 (7/7/2015)- View of AFFF tank (unknown quantity) information card at Hangar 197 mechanical room.



Photo 32 (7/7/2015)- View of piping at Hangar 197 mechanical room.



Photo 33 (7/7/2015)- View of AFFF nozzle cannon at Hangar 197.



Photo 34 (7/7/2015)- View of 800-gallon AFFF tank at Hangar 204 mechanical room.



Photo 35 (7/7/2015)- View of AFFF distribution piping at Hangar 204 mechanical room.



Photo 36 (7/7/2015)- View of AFFF underwing nozzle cannon assembly at Hangar 204.



Photo 37 (7/7/2015)- View of foam system activation button at Hangar 204.



Photo 38 (7/7/2015)- View of floor trench at Hangar 204.

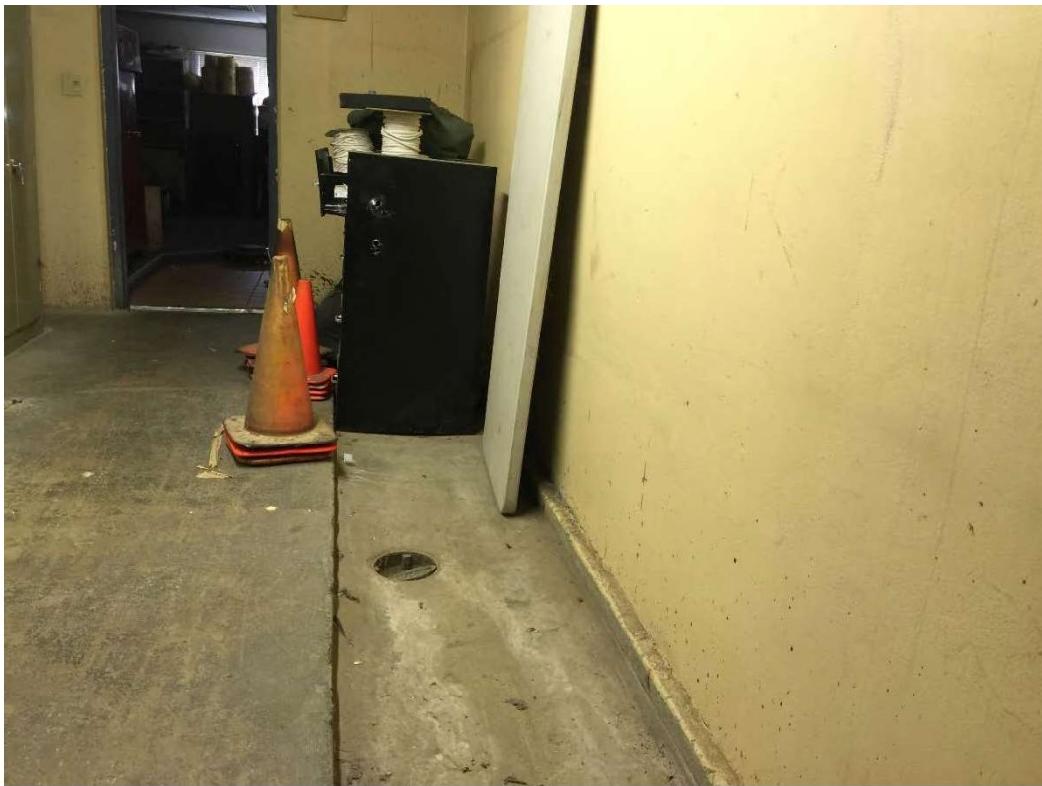


Photo 39 (7/8/2015)- View of hose wash-out area at former fire station. Floor drain is visible.

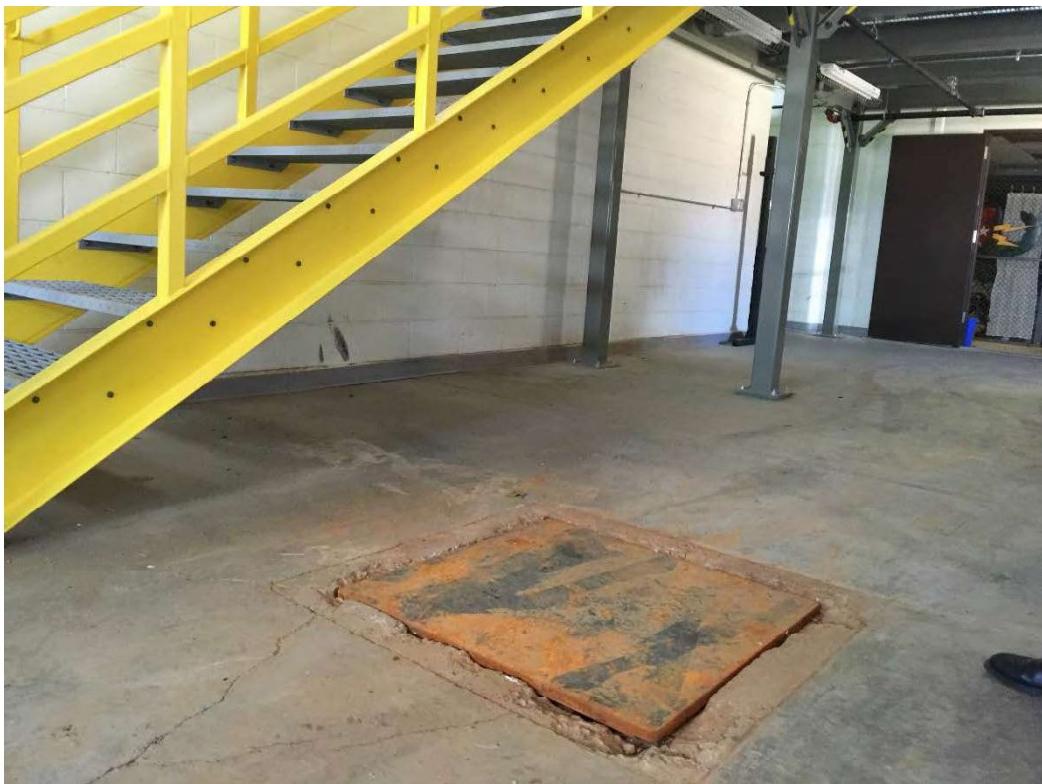


Photo 40 (7/8/2015)- Location of oil-water separator at former fire station.



Photo 41 (7/8/2015)- Southeast facing view of outdoor AFFF storage area at former fire station.



Photo 42 (7/8/2015)- Northwest facing view of near outdoor AFFF storage area at former fire station. A storm drain is visible on the alley.

APPENDIX B
FIELD DOCUMENTATION

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Potential Hazardous Waste Site Preliminary Assessment Form					Identification
					State:
					CERCLIS Discovery Date:
1. General Site Information					
Name: Former FTA No. 1 (FT-06)		Street Address: NA			
City: Cannon AFB		State: NM	Zip Code: 88103	County: Curry	Co. Code: 9 Cong. Dist: 3
Latitude: 34°24'8.27"	Longitude: 103°18'10.88"	Approximate Area of Site: ____ Acres ____ Square Ft		Status of Site: <input type="checkbox"/> Active <input type="checkbox"/> Not Specified <input checked="" type="checkbox"/> Inactive <input type="checkbox"/> NA (GW plume, etc.)	
<p>Site Description: FTA No. 1 is located in the northeast corner of the base and was used from approximately 1959 to 1968. This former FTA is currently referenced as site FT-06.</p> <p>FT-06 was an unlined surface approximately 100 feet in diameter. Approximately 300 gallons of waste oils, fuels, and spent solvents were burned on the ground at this former FTA to provide practical fire training experience. Wastes were brought to the site in 55-gallon drums. Training exercises were conducted here approximately twice per month. Prior to the initiation of some exercises, the ground was reportedly pre-saturated with water. However, some residual quantities of the waste liquids may have percolated into the subsurface.</p> <p>Currently, the area is defined by abundant aluminum slag and slightly stressed vegetation. In October 2006, the New Mexico Environment Department recommended further investigation at the area because lead and total petroleum hydrocarbons (TPH) were detected above industrial standards. A June 2009 Resource Conservation and Recovery Act (RCRA) Facility Investigation report recommends a status of "Corrective Action Complete with Controls" for the area.</p> <p>The Fire Inspector was not aware of any use of AFFF at FT-06 and no records were found to indicate that AFFF was ever used or stored at this FTA. The FTA ceased operations before initial use of AFFF by the Air Force in 1970. As such, there was no evidence of a release of AFFF to the environment at the time of the assessment.</p>					
2. Owner/Operator Information					
Owner: Cannon AFB		Operator: Same as "Owner"			
Street Address:		Street Address:			
City: Cannon AFB		City:			
State: NM	Zip Code: 88103	Telephone:	State:	Zip Code:	Telephone:
Type of Ownership: <input type="checkbox"/> Private <input checked="" type="checkbox"/> Federal Agency <input type="checkbox"/> Name: __DOD__ <input type="checkbox"/> State <input type="checkbox"/> Indian			Type of Ownership: <input type="checkbox"/> County <input type="checkbox"/> Municipal <input checked="" type="checkbox"/> Not Specified <input type="checkbox"/> Other _____ <input type="checkbox"/> Private <input type="checkbox"/> Federal Agency <input type="checkbox"/> Name: _____ <input type="checkbox"/> State <input type="checkbox"/> Indian		
3. Site Evaluator Information					
Name of Evaluator: Ryan McVickers	Agency/Organization: HydroGeoLogic, Inc.			Date Prepared: 08/01/2015	
Street Address: 340 E. Palm Lane, Ste. A240		City: Phoenix		State: Arizona	
Name of EPA or State Agency Contact: NA		Street Address:			
City:	State:		Telephone:		

7. Ground Water Pathway - NA		
Is Ground Water Used for Drinking Within 4 Miles: <input type="checkbox"/> Yes <input type="checkbox"/> No	Is There a Suspected Release to Ground Water ¹ : <input type="checkbox"/> Yes <input type="checkbox"/> No	List Secondary Target Population Served by Ground Water Withdrawn From: 0 - 1/4 Mile _____ >1/4 - 1/2 Mile _____ >1/2 - 1 Mile _____ >1 - 2 Mile _____ >2 - 3 Mile _____ >3 - 4 Mile _____ 22,473
	If Yes, Distance to nearest Drinking Well: _____ Feet	
Type of Drinking Water Wells Within 4 Miles (check all that apply): <input type="checkbox"/> Municipal <input type="checkbox"/> Private <input type="checkbox"/> None	Have Primary Target Drinking Water Wells Been Identified: <input type="checkbox"/> Yes <input type="checkbox"/> No	
	If Yes, Enter Primary Target Population: 22,473 People ³	
Depth to Shallowest Aquifer: _____ Feet	Nearest Designated Wellhead Protection Area ⁶ : <input type="checkbox"/> Underlies Site <input type="checkbox"/> >0-4 Miles <input type="checkbox"/> None Within 4 Miles	Total Within 4 Miles ⁴ 22,473
Karst Terrain/Aquifer Present: <input type="checkbox"/> Yes <input type="checkbox"/> No		*Use population #s for PA Table 2 *Note nearest well for #5 on GW Pathway Scoresheet
8. Surface Water Pathway - NA		
Type of Surface Water Draining Site and 15 Miles Downstream (check all that apply): <input type="checkbox"/> Stream <input type="checkbox"/> River <input type="checkbox"/> Pond <input type="checkbox"/> Lake <input type="checkbox"/> Bay <input type="checkbox"/> Ocean <input type="checkbox"/> Other _____	Shortest Overland Distance From Any Source to Surface Water: _____ Feet 3.5 Miles	
Is There a Suspected Release to Surface Water ¹ : <input type="checkbox"/> Yes <input type="checkbox"/> No	Site is Located in: <input type="checkbox"/> Annual - 10 yr Floodplain <input type="checkbox"/> >10yr - 100yr Floodplain <input type="checkbox"/> >100yr - 500yr Floodplain <input type="checkbox"/> >500yr Floodplain	
Drinking Water Intake Located Along the Surface Water Migration Path: <input type="checkbox"/> Yes <input type="checkbox"/> No	List All Secondary Target Drinking Water Intakes: Name: _____ Water Body: _____ Flow (cfs): _____ Population Served: _____ _____ _____ _____ _____ Total within 15 Miles ⁴ _____	
Have Primary Target Drinking Water Intakes Been Identified: <input type="checkbox"/> Yes If Yes, Distance to Nearest Drinking Water Intake : _____ Miles ⁶ <input type="checkbox"/> No		
If Yes, Enter Population Served by Target Intake: _____ People ⁴		
Fisheries Located Along the Surface Water Migration Path: <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, Distance to Nearest Fishery: _____ Miles	List All Secondary Target Fisheries ¹⁰ : Water Body/ Fishery Name : _____ Flow (cfs): _____ _____ _____ _____	
Have Primary Target Fisheries Been Identified: <input type="checkbox"/> Yes <input type="checkbox"/> No		

8. Surface Water Pathway (continued)

Wetlands Located Along the Surface Water Migration Path:	Other Sensitive Environments Located Along the Surface Water Migration Path:
<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes If Yes, Distance to Nearest Sensitive Environment: _____ Miles <input type="checkbox"/> No
Have Primary Target Wetlands Been Identified:	Have Primary Target Sensitive Environments Been Identified:
<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
List All Wetlands:	List All Sensitive Environments ¹¹ :
Water Body : <u>Flow (cfs):</u> <u>Frontage miles:</u> <u>Sewage Lagoons</u> _____ _____	Water Body : <u>Flow (cfs):</u> <u>Sensitive Environment Type:</u> <u>Lake Holloman</u> _____ _____

9. Soil Exposure Pathway - NA

Are People Occupying Residence or Attending School or Daycare on or Within 200 Feet of Area of Known or Suspected Contamination:	Number of Workers Onsite ⁴ : <input type="checkbox"/> None <input type="checkbox"/> 1 - 100 <input type="checkbox"/> 101 - 1,000 <input type="checkbox"/> > 1,000	Have Terrestrial Sensitive Environments Been Identified on or Within 200 Feet of Areas of Known or Suspected Contamination: <input type="checkbox"/> Yes <input type="checkbox"/> No
If Yes, Enter Total Residential Population: _____ People ²	Population Within 1 Mile: _____ People ⁷	If Yes, List Each Terrestrial Sensitive Environment ⁵ : _____ _____ _____

*Refer to PA Table 7 for environment types

10. Air Pathway - NA

Is there a Suspected Release to Air ¹ : <input type="checkbox"/> Yes <input type="checkbox"/> No	Wetlands Located Within 4 Miles of the Site ⁶ : <input type="checkbox"/> Yes If Yes, How Many Acres: <u>220</u> Acres <input type="checkbox"/> No
Enter Total Population on or Within: Onsite _____ 0-1/4 Mile _____ >1/4-1/2 Mile _____ >1/2-1 Mile _____ >1-2 Miles _____ >2-3 Miles _____ >3-4 Miles _____ Total Within 4 Miles ³⁻⁵ _____	Other Sensitive Environments Located Within 4 Miles of the Site: <input type="checkbox"/> Yes <input type="checkbox"/> No
	List All Sensitive Environments Within 1/2 Mile of the Site ⁶ : Distance: <u>Sensitive Environment Type/Wetlands Area (acres):</u> Onsite _____ 0-1/4 Mile _____ >1/4-1/2 Mile _____

*Refer to PA Table 10 for calculations on air pathway exposures

¹⁻¹¹ Refers to question number on PA pathway scoresheets

Potential Hazardous Waste Site Preliminary Assessment Form				Identification		
				State:	CERCLIS #:	
				CERCLIS Discovery Date:		
1. General Site Information						
Name: Former FTA No. 2 (FT-07)		Street Address: NA				
City: Cannon AFB		State: NM	Zip Code: 88103	County: Curry	Co. Code: 9	Cong. Dist: 3
Latitude: 34°22'13.05"	Longitude: 103°18'31.18"	Approximate Area of Site: ____ 3 ____ Acres ____ Square Ft		Status of Site: <input type="checkbox"/> Active <input type="checkbox"/> Not Specified <input checked="" type="checkbox"/> Inactive <input type="checkbox"/> NA (GW plume, etc.)		
Site Description: FTA No. 2 was used from approximately 1968 to 1974 to provide base personnel with practical experience in extinguishing fires. This former FTA is currently referenced as site FT-07 under the ERP. FT-07 is surrounded by sparsely vegetated land on all sides.						
<p>FT-07 is located in the southeast corner of the base adjacent to the abandoned runway and is recognizable as a circular, sparsely vegetated area. During its operational period, the area consisted of two round depressions in the land surface, each measuring approximately 100 feet in diameter. Unused JP-4 was the only fuel burned at this site, with approximately 300 gallons used per exercise. Exercises were conducted approximately twice per quarter at FT-07. Before each training exercise, the ground was pre-soaked with water to minimize infiltration of any residual fuel.</p> <p>The Fire Inspector was not aware of any specific use of AFFF at FT-07. However, he mentioned that it was entirely possible that AFFF was used at FT-07 because it operated after initial use of AFFF by the Air Force in 1970. According to an August 1983 ERP Records Search document, FTA procedures at Cannon AFB since approximately 1970 have been to "presaturate the ground surface with water, apply the starter fuel, ignite, preburn for 30 to 45 seconds, and extinguish with AFFF." The quantity of AFFF that may have been used at FT-07 is unknown.</p> <p>Because the round depressions at FT-07 were unlined, any substance used there would have permeated into the soil, as evidenced by the detections of oil, grease, lead, BTEX, and TPH. As such, there is a high probability that AFFF was released to the environment at FT-07.</p>						
2. Owner/Operator Information						
Owner: Cannon AFB		Operator: Same as "Owner"				
Street Address:		Street Address:				
City: Cannon AFB		City:				
State: NM	Zip Code: 88103	Telephone:	State:	Zip Code:	Telephone:	
Type of Ownership: <input type="checkbox"/> Private <input type="checkbox"/> County <input checked="" type="checkbox"/> Federal Agency <input type="checkbox"/> Municipal Name: DOD _____ <input type="checkbox"/> State <input type="checkbox"/> Not Specified <input type="checkbox"/> Indian <input type="checkbox"/> Other _____			Type of Ownership: <input type="checkbox"/> Private <input type="checkbox"/> County <input type="checkbox"/> Federal Agency <input type="checkbox"/> Municipal Name: _____ <input type="checkbox"/> State <input type="checkbox"/> Not Specified <input type="checkbox"/> Indian <input type="checkbox"/> Other _____			
3. Site Evaluator Information						
Name of Evaluator: Ryan McVickers	Agency/Organization: HydroGeoLogic, Inc.			Date Prepared: 07/01/2015		
Street Address: 340 E. Palm Lane, Ste. A240		City: Phoenix		State: Arizona		
Name of EPA or State Agency Contact: NA		Street Address:				
City:	State:		Telephone:			

*C=Constituent, W=Wastestream, V=Volume, A=Area

7. Ground Water Pathway			
Is Ground Water Used for Drinking Within 4 Miles: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is There a Suspected Release to Ground Water ¹ : <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	List Secondary Target Population Served by Ground Water Withdrawn From:	
If Yes, Distance to nearest Drinking Well: 1.7 miles	Have Primary Target Drinking Water Wells Been Identified: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	0 - 1/4 Mile	_____
Type of Drinking Water Wells Within 4 Miles <input checked="" type="checkbox"/> Municipal <input type="checkbox"/> Private <input type="checkbox"/> None	If Yes, Enter Primary Target Population: ____ 6,540 People ³	>1/4 - 1/2 Mile	_____
Depth to Shallowest Aquifer: ____ Feet	Nearest Designated Wellhead Protection Area ⁶ : <input type="checkbox"/> Underlies Site <input type="checkbox"/> >0-4 Miles <input checked="" type="checkbox"/> None Within 4 Miles	>1/2 - 1 Mile	_____
Karst Terrain/Aquifer Present: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		>1 - 2 Mile	_____
		>2 - 3 Mile	_____
		>3 - 4 Mile	_____
		Total Within 4 Miles ⁴	6,540
* Use population #'s for PA Table 2			
8. Surface Water Pathway			
Type of Surface Water Draining Site and 15 Miles Downstream (check all that apply): <input type="checkbox"/> Stream <input type="checkbox"/> River <input type="checkbox"/> Pond <input type="checkbox"/> Lake <input type="checkbox"/> Bay <input type="checkbox"/> Ocean <input type="checkbox"/> Other_Floodplain_	Shortest Overland Distance From Any Source to Surface Water: ____ Feet ____ Miles		
Is There a Suspected Release to Surface Water ¹ : <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Site is Located in: <input type="checkbox"/> Annual - 10 yr Floodplain <input type="checkbox"/> >10yr - 100yr Floodplain <input type="checkbox"/> >100yr - 500yr Floodplain <input type="checkbox"/> >500yr Floodplain		
Drinking Water Intake Located Along the Surface Water Migration Path: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	List All Secondary Target Drinking Water Intakes: Name: _____ Water Body: _____ Flow (cfs): _____ Population Served: _____ _____ _____ _____ _____		
Have Primary Target Drinking Water Intakes Been Identified: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, Distance to Nearest Drinking Water Intake : _____ Miles ⁶			
If Yes, Enter Population Served by Target Intake: ____ NA ____ People ⁴			
Fisheries Located Along the Surface Water Migration Path: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, Distance to Nearest Fishery: ____ Miles	List All Secondary Target Fisheries ¹⁰ : Water Body/ Fishery Name : _____ Flow (cfs): _____ _____ _____ _____ _____		
Have Primary Target Fisheries Been Identified: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			

8. Surface Water Pathway (continued)		
Wetlands Located Along the Surface Water Migration Path:	Other Sensitive Environments Located Along the Surface Water Migration Path: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, Distance to Nearest Sensitive Environment: _____ Miles	
Have Primary Target Wetlands Been Identified:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
List All Wetlands:	List All Sensitive Environments ¹¹ :	
<u>Water Body</u> : _____ Flow (cfs): _____ Frontage miles: _____	<u>Water Body</u> : _____ Flow (cfs): _____ Sensitive Environment Type: _____	
9. Soil Exposure Pathway		
Are People Occupying Residence or Attending School or Daycare on or Within 200 Feet of Area of Known or Suspected Contamination:	Number of Workers Onsite ⁴ : <input checked="" type="checkbox"/> None <input type="checkbox"/> 1 - 100 <input type="checkbox"/> 101 - 1,000 <input type="checkbox"/> > 1,000	Have Terrestrial Sensitive Environments Been Identified on or Within 200 Feet of Areas of Known or Suspected Contamination: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If Yes, Enter Total Residential Population: _____ People ²	Population Within 1 Mile: _____ People ⁷	If Yes, List Each Terrestrial Sensitive Environment ⁵ : _____ _____ _____
*Refer to PA Table 7 for environment types		
10. Air Pathway		
Is there a Suspected Release to Air ¹ : <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Wetlands Located Within 4 Miles of the Site ⁶ : <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, How Many Acres: _____ Acres	
Enter Total Population on or Within: Onsite _____ 0-1/4 Mile _____ >1/4-1/2 Mile _____ >1/2-1 Mile _____ >1-2 Miles _____ >2-3 Miles _____ >3-4 Miles _____ Total Within 4 Miles ³⁻⁵ _____	Other Sensitive Environments Located Within 4 Miles of the Site: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
	List All Sensitive Environments Within 1/2 Mile of the Site ⁶ : Distance: _____ Sensitive Environment Type/Wetlands Area (acres): Onsite _____ 0-1/4 Mile _____ >1/4-1/2 Mile _____	

¹⁻¹¹ Refers to question number on PA pathway scoresheets

Potential Hazardous Waste Site Preliminary Assessment Form			Identification	
			State:	CERCLIS #:
			CERCLIS Discovery Date:	
1. General Site Information				
Name: Former FTA No. 3 (FT-08)		Street Address: NA		
City: Cannon AFB		State: NM	Zip Code: 88103	County: Curry Co. Code: 9 Cong. Dist: 3
Latitude: 34°22'19.31"	Longitude: 103°18'23.68"	Approximate Area of Site: _____ Acres _____,000 _____ Square Ft	Status of Site: <input checked="" type="checkbox"/> Active <input type="checkbox"/> Not Specified <input type="checkbox"/> Inactive <input type="checkbox"/> NA (GW plume, etc.)	
<p>Site Description: FTA No. 3 was used from approximately 1968 to 1974 to provide base personnel with practical experience in extinguishing fires. This former FTA is currently referenced as site FT-08 under the ERP and was used concurrently with FT-07. FT-08 is surrounded by sparsely vegetated land on all sides.</p> <p>FT-08 is located in the southeast corner of the base adjacent to the abandoned runway. During its operational period, the area consisted of an unlined surface area in a half-moon shape that was approximately 100 feet in length. Unused JP-4 was the only fuel burned at this site, with approximately 300 gallons used per exercise. Exercises were conducted approximately twice per quarter at FT-08. Before each training exercise, the ground was pre-soaked with water to minimize infiltration of any residual fuel .</p> <p>The Fire Inspector was not aware of any specific use of AFFF at FT-08. However, he mentioned that it was entirely possible that AFFF was used at FT-08 because it operated after initial use of AFFF by the Air Force in 1970. According to an August 1983 ERP Records Search document, FTA procedures at Cannon AFB since approximately 1970 have been to "presaturate the ground surface with water, apply the starter fuel, ignite, preburn for 30 to 45 seconds, and extinguish with AFFF." The quantity of AFFF that may have been used at FT-08 is unknown.</p> <p>Because the exercise area at FT-08 was unlined, any substance used there would have permeated into the soil. As such, there is a high probability that AFFF was released to the environment at FT-08.</p>				
2. Owner/Operator Information				
Owner: Cannon AFB		Operator: Same as "Owner"		
Street Address:		Street Address:		
City: Cannon AFB		City:		
State: NM	Zip Code: 88103	Telephone:	State:	Zip Code:
Type of Ownership: <input type="checkbox"/> Private <input checked="" type="checkbox"/> Federal Agency Name: __DOD__ <input type="checkbox"/> State <input type="checkbox"/> Indian		Type of Ownership: <input type="checkbox"/> Private <input type="checkbox"/> Federal Agency Name: _____ <input type="checkbox"/> State <input type="checkbox"/> Other _____		
3. Site Evaluator Information				
Name of Evaluator: Ryan McVickers		Agency/Organization: HydroGeoLogic, Inc.		Date Prepared: 07/01/2015
Street Address: 340 E. Palm Lane, Ste. A240		City: Phoenix		State: Arizona
Name of EPA or State Agency Contact: NA		Street Address:		
City:		State:		Telephone:

*C=Constituent, W=Wastestream, V=Volume, A=Area

8. Surface Water Pathway (continued)

Wetlands Located Along the Surface Water Migration Path:	Other Sensitive Environments Located Along the Surface Water Migration Path:
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, Distance to Nearest Sensitive Environment: _____ Miles
Have Primary Target Wetlands Been Identified:	Have Primary Target Sensitive Environments Been Identified:
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
List All Wetlands:	List All Sensitive Environments ¹¹ :
Water Body : _____ Flow (cfs): _____ Frontage miles: _____	Water Body : _____ Flow (cfs): _____ Sensitive Environment Type: _____
_____	_____
_____	_____
_____	_____

9. Soil Exposure Pathway

Are People Occupying Residence or Attending School or Daycare on or Within 200 Feet of Area of Known or Suspected Contamination:	Number of Workers Onsite ⁴ :	Have Terrestrial Sensitive Environments Been Identified on or Within 200 Feet of Areas of Known or Suspected Contamination:
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> None <input type="checkbox"/> 1 - 100 <input type="checkbox"/> 101 - 1,000 <input type="checkbox"/> > 1,000	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If Yes, Enter Total Residential Population: _____ People ²	Population Within 1 Mile: _____ People ⁷	If Yes, List Each Terrestrial Sensitive Environment ⁵ : _____ _____ _____
*Refer to PA Table 7 for environment types		

10. Air Pathway

Is there a Suspected Release to Air ¹ :	Wetlands Located Within 4 Miles of the Site ⁶ :	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, How Many Acres: _____ Acres	
Enter Total Population on or Within:	Other Sensitive Environments Located Within 4 Miles of the Site:	
Onsite _____	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
0-1/4 Mile _____	List All Sensitive Environments Within 1/2 Mile of the Site ⁶ :	
>1/4-1/2 Mile _____	Distance: _____ Sensitive Environment Type/Wetlands Area (acres): _____	
>1/2-1 Mile _____	Onsite _____	
>1-2 Miles _____	0-1/4 Mile _____	
>2-3 Miles _____	>1/4-1/2 Mile _____	
>3-4 Miles _____	*Refer to PA Table 10 for calculations on air pathway exposures	
Total Within 4 Miles ³⁻⁵ _____		

¹⁻¹¹ Refers to question number on PA pathway scoresheets

Potential Hazardous Waste Site Preliminary Assessment Form						Identification State: _____ CERCLIS #: _____ CERCLIS Discovery Date: _____	
1. General Site Information							
Name: Former FTA No. 4 (FTA-4)		Street Address: NA					
City: Cannon AFB		State: NM	Zip Code: 88103	County: Curry	Co. Code: 9	Cong. Dist: 3	
Latitude: 34°22'13.24"	Longitude: 103°18'18.67"	Approximate Area of Site: ____ 5 ____ Acres ____ Square Ft		Status of Site: <input type="checkbox"/> Active <input type="checkbox"/> Not Specified <input checked="" type="checkbox"/> Inactive <input type="checkbox"/> NA (GW plume, etc.)			
Site Description: FTA No. 4 was used from approximately 1974 to 1995 to provide base personnel with practical experience in extinguishing fires. Prior to 1974, the area was used as a fuel truck cleaning area. This former FTA is currently referenced as site FTA-4 under the ERP. FTA-4 is surrounded by sparsely vegetated land on all sides.							
<p>FTA-4 is located in the southeast corner of the base. During its operational period, FTA-4 consisted of an unlined circular area approximately 400 feet in diameter. A mock aircraft was located in the center of the area. Exercises were conducted approximately twice per quarter. Before each exercise, the ground at FTA-4 was reportedly presaturated with water. From 1974 to 1975, commingled waste oils, solvents, and recovered JP-4 fuel were burned during fire training exercises. In 1975, a 2,000-gallon underground tank was installed to store recovered JP-4 fuel for burning, and until 1995 only JP-4 was burned during exercises.</p> <p>Prior to 1985, runoff generated during exercises at FTA-4 collected in an unlined pit. The soil at the bottom of the pit provided some natural filtration but did not prohibit downward migration of liquid waste (Radian, 1986). According to a July 1987 RCRA Facility Assessment report, JP-4 and AFFF collected in this unlined pit during training exercises. The pit was backfilled in 1985 and a new, lined pit with an oil/water separator (OWS) was installed to handle collected runoff. The OWS was removed in 1997.</p> <p>The Fire Inspector was not aware of any specific use of AFFF at FTA-4. However, he mentioned that it was entirely possible that AFFF was used at FTA-4 because it operated after initial use of AFFF by the Air Force in 1970. According to an August 1983 ERP Records Search document, FTA procedures at Cannon AFB since approximately 1970 have been to "presaturate the ground surface with water, apply the starter fuel, ignite, preburn for 30 to 45 seconds, and extinguish with AFFF." The quantity of AFFF that may have been used at FTA-4 is unknown.</p> <p>Because the training area and original runoff pit at FTA-4 were unlined, any substances used there would have permeated into the soil. As such, there is a high probability that AFFF was released to the environment at FTA-4.</p>							
2. Owner/Operator Information							
Owner: Cannon AFB			Operator: Same as "Owner"				
Street Address:			Street Address:				
City: Cannon AFB			City:				
State: NM	Zip Code: 88103	Telephone:	State:	Zip Code:	Telephone:		
Type of Ownership: <input type="checkbox"/> Private <input type="checkbox"/> County <input checked="" type="checkbox"/> Federal Agency <input type="checkbox"/> Municipal Name: __DOD____ <input type="checkbox"/> Not Specified <input type="checkbox"/> State <input type="checkbox"/> Other_____ <input type="checkbox"/> Indian			Type of Ownership: <input type="checkbox"/> Private <input type="checkbox"/> County <input type="checkbox"/> Federal Agency <input type="checkbox"/> Municipal Name: _____ <input type="checkbox"/> State <input type="checkbox"/> Not Specified <input type="checkbox"/> Indian				

3. Site Evaluator Information		
Name of Evaluator: Ryan McVickers	Agency/Organization: HydroGeoLogic, Inc.	Date Prepared: 07/01/2015
Street Address: 340 E. Palm Lane, Ste. A240	City: Phoenix	State: Arizona
Name of EPA or State Agency Contact: NA	Street Address:	
City:	State:	Telephone:
4. Site Disposition (for EPA use only)		
Emergency Response/Removal Assessment Recommendation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Date: _____	CERCLIS Recommendation: <input type="checkbox"/> Higher Priority SI <input type="checkbox"/> Lower Priority SI <input type="checkbox"/> NFRAP <input type="checkbox"/> RCRA <input type="checkbox"/> Other: _____ Date: _____	Signature: Name (typed): Position:
5. General Site Characteristics		
Predominant Land Use Within 1 Mile of Site (check all that apply): <input type="checkbox"/> Industrial <input type="checkbox"/> Agriculture <input type="checkbox"/> DOI <input type="checkbox"/> Commercial <input type="checkbox"/> Mining <input type="checkbox"/> Other Federal <input type="checkbox"/> Residential <input checked="" type="checkbox"/> DOD <input type="checkbox"/> Facility: <input type="checkbox"/> Forest/Fields <input type="checkbox"/> DOE <input type="checkbox"/> Other _____	Site Setting: <input type="checkbox"/> Urban <input type="checkbox"/> Suburban <input checked="" type="checkbox"/> Rural	Years of Operation: Beginning Year <u>1974</u> Ending Year <u>1995</u> <input type="checkbox"/> Unknown
Type of Site Operations (check all that apply): <input type="checkbox"/> Manufacturing (must check subcategory) <input type="checkbox"/> Lumber and Wood Products <input type="checkbox"/> Inorganic Chemicals <input type="checkbox"/> Plastic and/or Rubber Products <input type="checkbox"/> Paints, Varnishes <input type="checkbox"/> Industrial Organic Chemicals <input type="checkbox"/> Agricultural Chemicals <input type="checkbox"/> Miscellaneous Chemical Products <input type="checkbox"/> Primary Metals <input type="checkbox"/> Metal Coating, Plating, Engraving <input type="checkbox"/> Metal Forging, Stamping <input type="checkbox"/> Fabricated Structural Metal Products <input checked="" type="checkbox"/> Electronic Equipment <input type="checkbox"/> Other Manufacturing <input type="checkbox"/> Mining <input type="checkbox"/> Metals <input type="checkbox"/> Coal <input type="checkbox"/> Oil and Gas <input type="checkbox"/> Non-metallic Minerals	 <input type="checkbox"/> Retail <input type="checkbox"/> Recycling <input type="checkbox"/> Junk/Salvage Yard <input type="checkbox"/> Municipal Landfill <input type="checkbox"/> Other Landfill <input checked="" type="checkbox"/> DOD <input type="checkbox"/> DOE <input type="checkbox"/> DOI <input type="checkbox"/> Other Federal Facility _____ <input type="checkbox"/> RCRA <input type="checkbox"/> Treatment, Storage, or Disposal <input type="checkbox"/> Large Quantity Generator <input type="checkbox"/> Small Quantity Generator <input type="checkbox"/> Subtitle D <input type="checkbox"/> Municipal <input type="checkbox"/> Industrial <input type="checkbox"/> "Converter" <input type="checkbox"/> "Protective Filer" <input checked="" type="checkbox"/> "Non-or Late Filer" <input type="checkbox"/> Note Specified <input checked="" type="checkbox"/> Other _____	Waste Generated: <input checked="" type="checkbox"/> Onsite <input type="checkbox"/> Offsite <input type="checkbox"/> Onsite and Offsite Waste Deposition Authorized By: <input checked="" type="checkbox"/> Present Owner <input type="checkbox"/> Former Owner <input type="checkbox"/> Present & Former Owner <input type="checkbox"/> Unauthorized <input type="checkbox"/> Unknown Waste Accessible to the Public: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Distance to Nearest Dwelling, School, or Workplace: 2 miles

6. Waste Characteristics Information				
(Refer to PA Table 1 for WC Score)				
Source Type: (check all that apply)	Source Waste Quantity: (include unit)	Tier*:	General Type of Waste (check all that apply):	
<input type="checkbox"/> Landfill	_____	_____	<input type="checkbox"/> Metals	<input type="checkbox"/> Pesticides/Herbicides
<input type="checkbox"/> Surface Impoundment	_____	_____	<input type="checkbox"/> Organics	<input type="checkbox"/> Acids/Bases
<input type="checkbox"/> Drums	_____	_____	<input type="checkbox"/> Inorganics	<input type="checkbox"/> Oily Waste
<input type="checkbox"/> Tanks and Non-Dum Containers	_____	_____	<input type="checkbox"/> Solvents	<input type="checkbox"/> Municipal Waste
<input type="checkbox"/> Chemical Waste Pile	_____	_____	<input type="checkbox"/> Paints/Pigments	<input type="checkbox"/> Mining Waste
<input type="checkbox"/> Scrap Metal or Junk Pile	_____	_____	<input type="checkbox"/> Laboratory/Hospital Waste	<input type="checkbox"/> Explosives
<input type="checkbox"/> Tailings Pile	_____	_____	<input type="checkbox"/> Radioactive Waste	<input checked="" type="checkbox"/> Other AFFF
<input type="checkbox"/> Trash Pile (open drum)	_____	_____	<input type="checkbox"/> Construction/Demolition Waste	
<input type="checkbox"/> Land Treatment	_____	_____		
<input type="checkbox"/> Contaminated GW Plume (unidentified source)	_____	_____		
<input type="checkbox"/> Contaminated SW/Sediment (unidentified source)	_____	_____		
<input type="checkbox"/> Contaminated Soil	_____	_____		
<input checked="" type="checkbox"/> Other_Fire Traning	Unknown	_____		
<input type="checkbox"/> No Sources				

*C=Constituent, W=Wastestream, V=Volume, A=Area

Physical State of Waste as Deposited (check all that apply):

- Solid
- Sludge
- Powder
- Liquid
- Gas

7. Ground Water Pathway

Is Ground Water Used for Drinking Within 4 Miles: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is There a Suspected Release to Ground Water ¹ : <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	List Secondary Target Population Served by Ground Water Withdrawn From: 0 - 1/4 Mile _____ >1/4 - 1/2 Mile _____ >1/2 - 1 Mile _____ >1 - 2 Mile _____ >2 - 3 Mile _____ >3 - 4 Mile _____ Total Within 4 Miles ⁴ _____ 6,540
If Yes, Distance to nearest Drinking Well: 1.7 miles Feet	Have Primary Target Drinking Water Wells Been Identified: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Type of Drinking Water Wells Within 4 Miles <input checked="" type="checkbox"/> Municipal <input type="checkbox"/> Private <input type="checkbox"/> None	If Yes, Enter Primary Target Population: 6,540 People ³	
Depth to Shallowest Aquifer: _____ Feet	Nearest Designated Wellhead Protection Area ⁶ : <input type="checkbox"/> Underlies Site <input type="checkbox"/> >0-4 Miles <input checked="" type="checkbox"/> None Within 4 Miles	*Use population #s for PA Table 2 *Note nearest well for #5 on GW Pathway Scoresheet
Karst Terrain/Aquifer Present: <input type="checkbox"/> Yes <input type="checkbox"/> No		

8. Surface Water Pathway			
Type of Surface Water Draining Site and 15 Miles Downstream (check all that apply): <input type="checkbox"/> Stream <input type="checkbox"/> River <input type="checkbox"/> Pond <input type="checkbox"/> Lake <input type="checkbox"/> Bay <input type="checkbox"/> Ocean <input type="checkbox"/> Other _____	Shortest Overland Distance From Any Source to Surface Water: _____ Feet _____ Miles		
Is There a Suspected Release to Surface Water ¹ : <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Site is Located in: <input type="checkbox"/> Annual - 10 yr Floodplain <input type="checkbox"/> >10yr - 100yr Floodplain <input type="checkbox"/> >100yr - 500yr Floodplain <input type="checkbox"/> >500yr Floodplain		
Drinking Water Intake Located Along the Surface Water Migration Path: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	List All Secondary Target Drinking Water Intakes: <u>Name:</u> <u>Water Body:</u> <u>Flow (cfs):</u> <u>Population Served:</u> _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ Total within 15 Miles ⁴ _____ NA		
Have Primary Target Drinking Water Intakes Been Identified: <input type="checkbox"/> Yes If Yes, Distance to Nearest Drinking Water Intake : _____ Miles ⁶ <input checked="" type="checkbox"/> No	Fisheries Located Along the Surface Water Migration Path: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, Distance to Nearest Fishery: _____ Miles		
Have Primary Target Fisheries Been Identified: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	List All Secondary Target Fisheries ¹⁰ : <u>Water Body/ Fishery Name :</u> <u>Flow (cfs):</u> _____ _____ _____ _____ _____ _____		

8. Surface Water Pathway (continued)

Wetlands Located Along the Surface Water Migration Path:	Other Sensitive Environments Located Along the Surface Water Migration Path: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Have Primary Target Wetlands Been Identified: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No List All Wetlands: <u>Water Body :</u> _____ <u>Flow (cfs):</u> _____ <u>Frontage miles:</u> _____ <hr/> <hr/> <hr/>	If Yes, Distance to Nearest Sensitive Environment: _____ Miles
	Have Primary Target Sensitive Environments Been Identified: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No List All Sensitive Environments¹¹: <u>Water Body :</u> _____ <u>Flow (cfs):</u> _____ <u>Sensitive Environment Type:</u> _____ <hr/> <hr/> <hr/>	

9. Soil Exposure Pathway

Are People Occupying Residence or Attending School or Daycare on or Within 200 Feet of Area of Known or Suspected Contamination: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, Enter Total Residential Population: _____ People ²	Number of Workers Onsite ⁴ : <input checked="" type="checkbox"/> None <input type="checkbox"/> 1 - 100 <input type="checkbox"/> 101 - 1,000 <input type="checkbox"/> > 1,000 Population Within 1 Mile: _____ People ⁷	Have Terrestrial Sensitive Environments Been Identified on or Within 200 Feet of Areas of Known or Suspected Contamination: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, List Each Terrestrial Sensitive Environment⁵: <hr/> <hr/> <hr/>
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*Refer to PA Table 7 for environment types

10. Air Pathway

Is there a Suspected Release to Air ¹ : <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Enter Total Population on or Within: Onsite _____ 0-1/4 Mile _____ >1/4-1/2 Mile _____ >1/2-1 Mile _____ >1-2 Miles _____ >2-3 Miles _____ >3-4 Miles _____ Total Within 4 Miles ³⁻⁵ _____	Wetlands Located Within 4 Miles of the Site ⁶ : <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, How Many Acres: _____ Acres
	Other Sensitive Environments Located Within 4 Miles of the Site: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
	List All Sensitive Environments Within 1/2 Mile of the Site⁶: <u>Distance:</u> _____ <u>Sensitive Environment Type/Wetlands Area (acres):</u> _____ Onsite _____ 0-1/4 Mile _____ >1/4-1/2 Mile _____

*Refer to PA Table 10 for calculations on air pathway exposures

¹⁻¹¹ Refers to question number on PA pathway scoresheets

Potential Hazardous Waste Site Preliminary Assessment Form						Identification	
						State:	CERCLIS #:
						CERCLIS Discovery Date:	
1. General Site Information							
Name: Active FTA		Street Address: NA					
City: Cannon AFB		State: NM	Zip Code: 88103	County: Curry	Co. Code: 9	Cong. Dist: 3	
Latitude: 34°22'26.63"	Longitude: 103°18'31.95"	Approximate Area of Site: ____ 15 _____ Acres ____ Square Ft		Status of Site: <input checked="" type="checkbox"/> Active <input type="checkbox"/> Not Specified <input type="checkbox"/> Inactive <input type="checkbox"/> NA (GW plume, etc.)			
Site Description: The active FTA at Cannon AFB is located immediately northwest of FT-7, FT-8, and FTA-4 in the southeast corner of the base. It is bordered by the abandoned runway to the east and by sparsely vegetated land on all other sides.							
According to the Fire Inspector, the active FTA began operations in 1997 and currently consists of a circular, lined burn pit with a mock of a large aircraft, a propane fuel tank, a control tower, and a lined evaporation pond. Propane is the only fuel used at this FTA for fire training activities.							
Fire training exercises are conducted at the active FTA approximately once per month using water or AFFF. The fire department also conducts vehicle foam checks annually at the active FTA. The amount of AFFF used at the active FTA varies depending on the exercise or vehicle being tested. Typically, AFFF is sprayed from vehicles into the burn pit until there is a consistent spray pattern.							
Liquids discharged into the burn pit, including water and AFFF, drain to the evaporation pond located approximately 300 feet southwest. The evaporation pond is lined and surrounded by fencing. Liquid in the pond is simply left to evaporate.							
There was no available documentation or evidence of a release of AFFF to the environment from the lined containment system at the time of the assessment.							
2. Owner/Operator Information							
Owner: Cannon AFB		Operator: Same as "Owner"					
Street Address:		Street Address:					
City: Cannon AFB		City:					
State: NM	Zip Code: 88103	Telephone:	State:	Zip Code:	Telephone:		
Type of Ownership: <input type="checkbox"/> Private <input checked="" type="checkbox"/> Federal Agency Name: __DOD_____ <input type="checkbox"/> State <input type="checkbox"/> Indian			Type of Ownership: <input type="checkbox"/> County <input type="checkbox"/> Municipal <input checked="" type="checkbox"/> Not Specified <input type="checkbox"/> Other_____				
3. Site Evaluator Information							
Name of Evaluator: Ryan McVickers		Agency/Organization: HydroGeoLogic, Inc.			Date Prepared: 08/01/2015		
Street Address: 340 E. Palm Lane, Ste. A240			City: Phoenix		State: Arizona		
Name of EPA or State Agency Contact: NA			Street Address:				
City:		State:		Telephone:			

8. Surface Water Pathway (continued)

Wetlands Located Along the Surface Water Migration Path:	Other Sensitive Environments Located Along the Surface Water Migration Path:
<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, Distance to Nearest Sensitive Environment: _____ Miles
Have Primary Target Wetlands Been Identified:	Have Primary Target Sensitive Environments Been Identified:
<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
List All Wetlands:	List All Sensitive Environments ¹¹ :
Water Body : <u>Flow (cfs):</u> <u>Frontage miles:</u> Sewage Lagoons _____ _____	Water Body : <u>Flow (cfs):</u> <u>Sensitive Environment Type:</u> Lake Holloman _____ _____

9. Soil Exposure Pathway - NA

Are People Occupying Residence or Attending School or Daycare on or Within 200 Feet of Area of Known or Suspected Contamination:	Number of Workers Onsite ⁴ : <input type="checkbox"/> None <input type="checkbox"/> 1 - 100 <input type="checkbox"/> 101 - 1,000 <input type="checkbox"/> > 1,000	Have Terrestrial Sensitive Environments Been Identified on or Within 200 Feet of Areas of Known or Suspected Contamination: <input type="checkbox"/> Yes <input type="checkbox"/> No
If Yes, Enter Total Residential Population: _____ People ²	Population Within 1 Mile: _____ People ⁷	If Yes, List Each Terrestrial Sensitive Environment ⁵ : _____ _____ _____

*Refer to PA Table 7 for environment types

10. Air Pathway - NA

Is there a Suspected Release to Air ¹ : <input type="checkbox"/> Yes <input type="checkbox"/> No	Wetlands Located Within 4 Miles of the Site ⁶ : <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, How Many Acres: <u>220</u> Acres
Enter Total Population on or Within: Onsite _____ 0-1/4 Mile _____ >1/4-1/2 Mile _____ >1/2-1 Mile _____ >1-2 Miles _____ >2-3 Miles _____ >3-4 Miles _____ Total Within 4 Miles ³⁻⁵ _____	Other Sensitive Environments Located Within 4 Miles of the Site: <input type="checkbox"/> Yes <input type="checkbox"/> No
	List All Sensitive Environments Within 1/2 Mile of the Site ⁶ : Distance: <u>Sensitive Environment Type/Wetlands Area (acres):</u> Onsite _____ 0-1/4 Mile _____ >1/4-1/2 Mile _____

*Refer to PA Table 10 for calculations on air pathway exposures

¹⁻¹¹ Refers to question number on PA pathway scoresheets

Potential Hazardous Waste Site Preliminary Assessment Form			Identification	
			State:	CERCLIS #:
			CERCLIS Discovery Date:	
1. General Site Information				
Name: Hangar 109		Street Address: NA		
City: Cannon AFB		State: NM	Zip Code: 88103	County: Curry Co. Code: 9 Cong. Dist: 3
Latitude: 34°23'16.08"	Longitude: 103°19'45.59"	Approximate Area of Site: _____ Acres _____ Square Ft	Status of Site: <input checked="" type="checkbox"/> Active <input type="checkbox"/> Not Specified <input type="checkbox"/> Inactive <input type="checkbox"/> NA (GW plume, etc.)	
<p>Site Description: Hangar 109 is located in the west central portion of Cannon AFB. The hangar room currently contains a 1,400-gallon aboveground storage tank (AST) containing 3% AFFF and associated piping. The fire suppression systems serving the hangar bays consist of an overhead wet pipe sprinkler system and an underwing AFFF system. The underwing AFFF system is comprised of a series of nozzle cannons placed along the hangar bay walls that point towards parked aircraft. The system is activated by a manual discharge station serving the hangar bay. All systems are currently operational and are tested every two years using approximately one gallon of AFFF concentrate. Discharge from the hangar bay is routed to a floor trench along the edge of the bay or to a storm drain inlet on the concrete ramp adjacent to the hangar. The floor trench in Hangar 109 is equipped with a valve that automatically closes when the AFFF system is activated in order to keep foam from entering the sanitary sewer system. As AFFF and water accumulate in the trench, the valve can be manually opened to gradually allow liquid to enter the sanitary sewer system.</p> <p>Hangar personnel are required to notify workers at the WWTP when a release of AFFF occurs. WWTP staff can then divert incoming wastewater to a 9 million-gallon storage basin which bypasses the main treatment systems. Wastewater in the basin is then gradually sent to the treatment systems for processing along with regular influent. Effluent from the WWTP is discharged to outfalls that release to the North Playa Lake and the Whispering Winds Golf Course. Additionally, the base water quality manager has authorized AFFF to discharge to the storm sewer drainage system. Storm drains near Hangar 109 convey liquid directly to the South Playa Lake. There is no record of any AFFF being released to storm drains at Hangar 109. According to the fire suppression systems manager and base air quality specialist, there was a release of AFFF at Hangar 109 in December 1999 when an office fire activated the AFFF system. Approximately 500 gallons of AFFF were released to the hangar bay, entered the floor trench, and were routed to the WWTP. There was no available documentation or evidence of a release of AFFF to the environment from the containment systems at the hangar. Because the release of AFFF in December 1999 was routed to the WWTP and eventually discharged to its outfalls, no release of AFFF to the environment has occurred at Hangar 109.</p>				
2. Owner/Operator Information				
Owner: Cannon AFB		Operator: Same as "Owner"		
Street Address:		Street Address:		
City: Cannon AFB		City:		
State: NM	Zip Code: 88103	Telephone:	State:	Zip Code:
Type of Ownership: <input type="checkbox"/> Private <input checked="" type="checkbox"/> Federal Agency Name: <u>DOD</u> <input type="checkbox"/> State <input type="checkbox"/> Indian		Type of Ownership: <input type="checkbox"/> Private <input type="checkbox"/> County <input type="checkbox"/> Municipal <input checked="" type="checkbox"/> Not Specified <input type="checkbox"/> Other _____		

3. Site Evaluator Information		
Name of Evaluator: Ryan McVickers	Agency/Organization: HydroGeoLogic, Inc.	Date Prepared: 08/01/2015
Street Address: 340 E. Palm Lane, Ste. A240	City: Phoenix	State: Arizona
Name of EPA or State Agency Contact: NA	Street Address:	
City:	State:	Telephone:
4. Site Disposition (for EPA use only)		
Emergency Response/Removal Assessment Recommendation: <input type="checkbox"/> Yes <input type="checkbox"/> No Date: _____	CERCLIS Recommendation: <input type="checkbox"/> Higher Priority SI <input type="checkbox"/> Lower Priority SI <input type="checkbox"/> NFRAP <input type="checkbox"/> RCRA <input type="checkbox"/> Other: _____ Date: _____	Signature: Name (typed): Position:
5. General Site Characteristics - NA		
Predominant Land Use Within 1 Mile of Site (check all that apply): <input type="checkbox"/> Industrial <input type="checkbox"/> Agriculture <input type="checkbox"/> DOI <input type="checkbox"/> Commercial <input type="checkbox"/> Mining <input type="checkbox"/> Other Federal <input type="checkbox"/> Residential <input type="checkbox"/> DOD <input type="checkbox"/> Facility: <input type="checkbox"/> Forest/Fields <input type="checkbox"/> DOE <input type="checkbox"/> Other _____	Site Setting: <input type="checkbox"/> Urban <input type="checkbox"/> Suburban <input checked="" type="checkbox"/> Rural	Years of Operation: Beginning Year _____ Ending Year _____ <input type="checkbox"/> Unknown
Type of Site Operations (check all that apply): <input type="checkbox"/> Manufacturing (must check subcategory) <input type="checkbox"/> Lumber and Wood Products <input type="checkbox"/> Inorganic Chemicals <input type="checkbox"/> Plastic and/or Rubber Products <input type="checkbox"/> Paints, Varnishes <input type="checkbox"/> Industrial Organic Chemicals <input type="checkbox"/> Agricultural Chemicals <input type="checkbox"/> Miscellaneous Chemical Products <input type="checkbox"/> Primary Metals <input type="checkbox"/> Metal Coating, Plating, Engraving <input type="checkbox"/> Metal Forging, Stamping <input type="checkbox"/> Fabricated Structural Metal Products <input type="checkbox"/> Electronic Equipment <input type="checkbox"/> Other Manufacturing <input type="checkbox"/> Mining <input type="checkbox"/> Metals <input type="checkbox"/> Coal <input type="checkbox"/> Oil and Gas <input type="checkbox"/> Non-metallic Minerals	 <input type="checkbox"/> Retail <input type="checkbox"/> Recycling <input type="checkbox"/> Junk/Salvage Yard <input type="checkbox"/> Municipal Landfill <input type="checkbox"/> Other Landfill <input type="checkbox"/> DOD <input type="checkbox"/> DOE <input type="checkbox"/> DOI <input type="checkbox"/> Other Federal Facility _____ <input type="checkbox"/> RCRA <input type="checkbox"/> Treatment, Storage, or Disposal <input type="checkbox"/> Large Quantity Generator <input type="checkbox"/> Small Quantity Generator <input type="checkbox"/> Subtitle D <input type="checkbox"/> Municipal <input type="checkbox"/> Industrial <input type="checkbox"/> "Converter" <input type="checkbox"/> "Protective Filer" <input type="checkbox"/> "Non-or Late Filer" <input type="checkbox"/> Note Specified <input type="checkbox"/> Other _____	Waste Generated: <input type="checkbox"/> Onsite <input type="checkbox"/> Offsite <input type="checkbox"/> Onsite and Offsite Waste Deposition Authorized By: <input type="checkbox"/> Present Owner <input type="checkbox"/> Former Owner <input type="checkbox"/> Present & Former Owner <input type="checkbox"/> Unauthorized <input type="checkbox"/> Unknown Waste Accessible to the Public: <input type="checkbox"/> Yes <input type="checkbox"/> No Distance to Nearest Dwelling, School, or Workplace: _____ Feet

6. Waste Characteristics Information - NA				
(Refer to PA Table 1 for WC Score)				
Source Type: (check all that apply)	Source Waste Quantity: (include unit)	Tier*:	General Type of Waste (check all that apply):	
<input type="checkbox"/> Landfill _____	_____	_____	<input type="checkbox"/> Metals _____	<input type="checkbox"/> Pesticides/Herbicides _____
<input type="checkbox"/> Surface Impoundment _____	_____	_____	<input type="checkbox"/> Organics _____	<input type="checkbox"/> Acids/Bases _____
<input type="checkbox"/> Drums _____	_____	_____	<input type="checkbox"/> Inorganics _____	<input type="checkbox"/> Oily Waste _____
<input type="checkbox"/> Tanks and Non-Dum Containers _____	_____	_____	<input type="checkbox"/> Solvents _____	<input type="checkbox"/> Municipal Waste _____
<input type="checkbox"/> Chemical Waste Pile _____	_____	_____	<input type="checkbox"/> Paints/Pigments _____	<input type="checkbox"/> Mining Waste _____
<input type="checkbox"/> Scrap Metal or Junk Pile _____	_____	_____	<input type="checkbox"/> Laboratory/Hospital Waste _____	<input type="checkbox"/> Explosives _____
<input type="checkbox"/> Tailings Pile _____	_____	_____	<input type="checkbox"/> Radioactive Waste _____	<input type="checkbox"/> Other _____
<input type="checkbox"/> Trash Pile (open drum) _____	_____	_____	<input type="checkbox"/> Construction/Demolition Waste _____	
<input type="checkbox"/> Land Treatment _____	_____	_____		
<input type="checkbox"/> Contaminated GW Plume (unidentified source) _____	_____	_____		
<input type="checkbox"/> Contaminated SW/Sediment (unidentified source) _____	_____	_____		
<input type="checkbox"/> Contaminated Soil _____	_____	_____		
<input type="checkbox"/> Other _____	_____	_____		
<input type="checkbox"/> No Sources _____	_____	_____		

*C=Constituent, W=Wastestream, V=Volume, A=Area

Physical State of Waste as Deposited (check all that apply):

- Solid
- Sludge
- Powder
- Liquid
- Gas

7. Ground Water Pathway - NA

Is Ground Water Used for Drinking Within 4 Miles: <input type="checkbox"/> Yes <input type="checkbox"/> No	Is There a Suspected Release to Ground Water ¹ : <input type="checkbox"/> Yes <input type="checkbox"/> No	List Secondary Target Population Served by Ground Water Withdrawn From: 0 - 1/4 Mile _____ >1/4 - 1/2 Mile _____ >1/2 - 1 Mile _____ >1 - 2 Mile _____ >2 - 3 Mile _____ >3 - 4 Mile _____ Total Within 4 Miles ⁴ _____
If Yes, Distance to nearest Drinking Well: _____ Feet	Have Primary Target Drinking Water Wells Been Identified: <input type="checkbox"/> Yes <input type="checkbox"/> No	
Type of Drinking Water Wells Within 4 Miles <input type="checkbox"/> Municipal <input type="checkbox"/> Private <input type="checkbox"/> None	If Yes, Enter Primary Target Population: _____ People ³	
Depth to Shallowest Aquifer: _____ Feet	Nearest Designated Wellhead Protection Area ⁶ : <input type="checkbox"/> Underlies Site <input type="checkbox"/> >0-4 Miles <input type="checkbox"/> None Within 4 Miles	
Karst Terrain/Aquifer Present: <input type="checkbox"/> Yes <input type="checkbox"/> No		<p>*Use population #s for PA Table 2</p> <p>*Note nearest well for #5 on GW Pathway Scoresheet</p>

8. Surface Water Pathway - NA			
Type of Surface Water Draining Site and 15 Miles Downstream (check all that apply):	Shortest Overland Distance From Any Source to Surface Water:		
<input type="checkbox"/> Stream <input type="checkbox"/> River <input type="checkbox"/> Pond <input checked="" type="checkbox"/> Lake <input type="checkbox"/> Bay <input type="checkbox"/> Ocean <input type="checkbox"/> Other _____	______ Feet ______ Miles		
Is There a Suspected Release to Surface Water ¹ :	Site is Located in:		
<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Annual - 10 yr Floodplain <input type="checkbox"/> >10yr - 100yr Floodplain <input type="checkbox"/> >100yr - 500yr Floodplain <input type="checkbox"/> >500yr Floodplain		
Drinking Water Intake Located Along the Surface Water Migration Path:	List All Secondary Target Drinking Water Intakes:		
<input type="checkbox"/> Yes <input type="checkbox"/> No	<u>Name:</u> _____ <u>Water Body:</u> _____ <u>Flow (cfs):</u> _____ <u>Population Served:</u> _____ _____ _____ _____ _____		
Have Primary Target Drinking Water Intakes Been Identified:			
<input type="checkbox"/> Yes If Yes, Distance to Nearest Drinking Water Intake : _____ Miles ⁶ <input type="checkbox"/> No	_____ _____ _____ _____ _____ _____ Total within 15 Miles ⁴ _____		
If Yes, Enter Population Served by Target Intake: _____ People ⁴			
Fisheries Located Along the Surface Water Migration Path:	List All Secondary Target Fisheries ¹⁰ :		
<input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, Distance to Nearest Fishery: _____ Miles	<u>Water Body/ Fishery Name :</u> _____ <u>Flow (cfs):</u> _____ _____ _____ _____		
Have Primary Target Fisheries Been Identified:			
<input type="checkbox"/> Yes <input type="checkbox"/> No			
Wetlands Located Along the Surface Water Migration Path:	Other Sensitive Environments Located Along the Surface Water Migration Path:		
<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes If Yes, Distance to Nearest Sensitive Environment: _____ Miles <input type="checkbox"/> No		
Have Primary Target Wetlands Been Identified:	Have Primary Target Sensitive Environments Been Identified:		
<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		
List All Wetlands:	List All Sensitive Environments ¹¹ :		
<u>Water Body :</u> _____ <u>Flow (cfs):</u> _____ <u>Frontage miles:</u> _____ _____ _____ _____	<u>Water Body :</u> _____ <u>Flow (cfs):</u> _____ <u>Sensitive Environment Type:</u> _____ _____ _____ _____		

9. Soil Exposure Pathway - NA		
Are People Occupying Residence or Attending School or Daycare on or Within 200 Feet of Area of Known or Suspected Contamination: <input type="checkbox"/> Yes <input type="checkbox"/> No	Number of Workers Onsite ⁴ : <input type="checkbox"/> None <input type="checkbox"/> 1 - 100 <input type="checkbox"/> 101 - 1,000 <input type="checkbox"/> > 1,000	Have Terrestrial Sensitive Environments Been Identified on or Within 200 Feet of Areas of Known or Suspected Contamination: <input type="checkbox"/> Yes <input type="checkbox"/> No
	If Yes, Enter Total Residential Population: <hr style="width: 100px; margin-left: 0;"/> _____ People ²	Population Within 1 Mile: <hr style="width: 100px; margin-left: 0;"/> _____ People ⁷
10. Air Pathway - NA		
Is there a Suspected Release to Air ¹ : <input type="checkbox"/> Yes <input type="checkbox"/> No	Wetlands Located Within 4 Miles of the Site ⁶ : <input type="checkbox"/> Yes If Yes, How Many Acres: _____ Acres <input type="checkbox"/> No	
Enter Total Population on or Within: Onsite _____ 0-1/4 Mile _____ >1/4-1/2 Mile _____ >1/2-1 Mile _____ >1-2 Miles _____ >2-3 Miles _____ >3-4 Miles _____ Total Within 4 Miles ³⁻⁵ _____	Other Sensitive Environments Located Within 4 Miles of the Site: <input type="checkbox"/> Yes <input type="checkbox"/> No	
	List All Sensitive Environments Within 1/2 Mile of the Site ⁶ : <u>Distance:</u> <u>Sensitive Environment Type/Wetlands Area (acres):</u> Onsite _____ 0-1/4 Mile _____ >1/4-1/2 Mile _____	

¹⁻¹¹ Refers to question number on PA pathway scoresheets^{*}Refer to PA Table 7 for environment types⁶Refer to PA Table 10 for calculations on air pathway exposures

Potential Hazardous Waste Site Preliminary Assessment Form						Identification	
						State:	CERCLIS #:
						CERCLIS Discovery Date:	
1. General Site Information							
Name: Hangar 119		Street Address: NA					
City: Cannon AFB		State: NM	Zip Code: 88103	County: Curry	Co. Code: 9	Cong. Dist: 3	
Latitude: 34°23'16.08"	Longitude: 103°19'45.59"	Approximate Area of Site: ____ Acres 48,000 Square Ft		Status of Site: <input checked="" type="checkbox"/> Active <input type="checkbox"/> Not Specified <input type="checkbox"/> Inactive <input type="checkbox"/> NA (GW plume, etc.)			
<p>Site Description: Hangar 119 is located in the west central portion of Cannon AFB. The fire suppression systems serving the hangar bays consist of an overhead wet pipe sprinkler system and an underwing AFFF system. The underwing AFFF system is comprised of a series of nozzle cannons placed along the hangar bay walls that point towards parked aircraft. The system is activated by a manual discharge station serving the hangar bays. All systems are currently operational and are tested every two years using approximately one gallon of AFFF concentrate. According to the fire suppression systems manager and base air quality specialist, there have been three accidental discharges of AFFF at Hangar 119:</p> <ul style="list-style-type: none"> • In September 2006, approximately 60 gallons of AFFF were discharged into a storm drain after the AFFF system was accidentally activated, possibly due to a corroded valve. • In September 2012, a "significant amount" of AFFF was discharged into bay number one and flowed onto the asphalt between Hangar 119 and Building 102. A "huge amount" of AFFF entered a storm drain while the rest was left to evaporate. • In July 2013, an unknown quantity of AFFF was discharged onto the concrete flight ramp near Hangar 119. It is unclear if AFFF entered a storm drain during this release. <p>Each hangar bay is equipped with floor trenches which connect to the WWTP. However, the floor trenches are sealed with concrete, blocking the path to the WWTP. Currently, the only outlets for AFFF at Hangar 119 are storm drains on the flight ramp outside the bays. Storm drains near Hangar 119 convey liquid directly to the South Playa Lake.</p> <p>Because the discharges of AFFF entered the storm water drainage system eventually releasing to the South Playa Lake, no release of AFFF to the environment has occurred at Hangar 119. Photo documentation of Hangar 119 is provided in Appendix A.</p>							
2. Owner/Operator Information							
Owner: Cannon AFB			Operator: Same as "Owner"				
Street Address:			Street Address:				
City: Cannon AFB			City:				
State: NM	Zip Code: 88103	Telephone:	State:	Zip Code:	Telephone:		
Type of Ownership: <input type="checkbox"/> Private <input checked="" type="checkbox"/> Federal Agency Name: <u>DOD</u> <input type="checkbox"/> State <input type="checkbox"/> Indian			Type of Ownership: <input type="checkbox"/> Private <input type="checkbox"/> Federal Agency Name: _____ <input type="checkbox"/> County <input type="checkbox"/> Municipal <input type="checkbox"/> Not Specified <input type="checkbox"/> Other _____ <input type="checkbox"/> Indian				
3. Site Evaluator Information							
Name of Evaluator: Ryan McVickers		Agency/Organization: HydroGeoLogic, Inc.			Date Prepared: 08/01/2015		
Street Address: 340 E. Palm Lane, Ste. A240			City: Phoenix		State: Arizona		
Name of EPA or State Agency Contact: NA			Street Address:				
City:		State:		Telephone:			

4. Site Disposition (for EPA use only)		
Emergency Response/Removal Assessment Recommendation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Date: _____		CERCLIS Recommendation: <input type="checkbox"/> Higher Priority SI <input type="checkbox"/> Lower Priority SI <input type="checkbox"/> NFRAP <input type="checkbox"/> RCRA <input type="checkbox"/> Other: _____ Signature: Name (typed): Position: Date: _____
5. General Site Characteristics - NA		
Predominant Land Use Within 1 Mile of Site (check all that apply): <input type="checkbox"/> Industrial <input type="checkbox"/> Agriculture <input type="checkbox"/> DOI <input type="checkbox"/> Commercial <input type="checkbox"/> Mining <input type="checkbox"/> Other Federal <input type="checkbox"/> Residential <input type="checkbox"/> DOD <input type="checkbox"/> Facility: <input type="checkbox"/> Forest/Fields <input type="checkbox"/> DOE <input type="checkbox"/> Other _____		Site Setting: <input type="checkbox"/> Urban <input type="checkbox"/> Suburban <input checked="" type="checkbox"/> Rural Years of Operation: Beginning Year _____ Ending Year _____ <input type="checkbox"/> Unknown
Type of Site Operations (check all that apply): <input type="checkbox"/> Manufacturing (must check subcategory) <input type="checkbox"/> Lumber and Wood Products <input type="checkbox"/> Inorganic Chemicals <input type="checkbox"/> Plastic and/or Rubber Products <input type="checkbox"/> Paints, Varnishes <input type="checkbox"/> Industrial Organic Chemicals <input type="checkbox"/> Agricultural Chemicals <input type="checkbox"/> Miscellaneous Chemical Products <input type="checkbox"/> Primary Metals <input type="checkbox"/> Metal Coating, Plating, Engraving <input type="checkbox"/> Metal Forging, Stamping <input type="checkbox"/> Fabricated Structural Metal Products <input type="checkbox"/> Electronic Equipment <input type="checkbox"/> Other Manufacturing <input type="checkbox"/> Mining <input type="checkbox"/> Metals <input type="checkbox"/> Coal <input type="checkbox"/> Oil and Gas <input type="checkbox"/> Non-metallic Minerals		Waste Generated: <input type="checkbox"/> Onsite <input type="checkbox"/> Offsite <input type="checkbox"/> Onsite and Offsite Waste Deposition Authorized By: <input type="checkbox"/> Present Owner <input type="checkbox"/> Former Owner <input type="checkbox"/> Present & Former Owner <input type="checkbox"/> Unauthorized <input type="checkbox"/> Unknown Waste Accessible to the Public: <input type="checkbox"/> Yes <input type="checkbox"/> No Distance to Nearest Dwelling, School, or Workplace: _____ Feet
6. Waste Characteristics Information - NA		
(Refer to PA Table 1 for WC Score)		
Source Type: (check all that apply)	Source Waste Quantity: (include unit)	Tier*: General Type of Waste (check all that apply):
<input type="checkbox"/> Landfill _____ <input type="checkbox"/> Surface Impoundment _____ <input type="checkbox"/> Drums _____ <input type="checkbox"/> Tanks and Non-Dum Containers _____ <input type="checkbox"/> Chemical Waste Pile _____ <input type="checkbox"/> Scrap Metal or Junk Pile _____ <input type="checkbox"/> Tailings Pile _____ <input type="checkbox"/> Trash Pile (open drum) _____ <input type="checkbox"/> Land Treatment _____ <input type="checkbox"/> Contaminated GW Plume (unidentified source) _____ <input type="checkbox"/> Contaminated SW/Sediment (unidentified source) _____ <input type="checkbox"/> Contaminated Soil _____ <input type="checkbox"/> Other _____ <input type="checkbox"/> No Sources _____	<input type="checkbox"/> Metals _____ <input type="checkbox"/> Organics _____ <input type="checkbox"/> Inorganics _____ <input type="checkbox"/> Solvents _____ <input type="checkbox"/> Paints/Pigments _____ <input type="checkbox"/> Laboratory/Hospital Waste _____ <input type="checkbox"/> Radioactive Waste _____ <input type="checkbox"/> Construction/Demolition Waste _____ <input type="checkbox"/> Pesticides/Herbicides _____ <input type="checkbox"/> Acids/Bases _____ <input type="checkbox"/> Oily Waste _____ <input type="checkbox"/> Municipal Waste _____ <input type="checkbox"/> Mining Waste _____ <input type="checkbox"/> Explosives _____ <input type="checkbox"/> Other _____	
Physical State of Waste as Deposited (check all that apply): <input type="checkbox"/> Solid <input type="checkbox"/> Sludge <input type="checkbox"/> Powder <input type="checkbox"/> Liquid <input type="checkbox"/> Gas		

*C=Constituent, W=Wastestream, V=Volume, A=Area

7. Ground Water Pathway - NA		
Is Ground Water Used for Drinking Within 4 Miles: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is There a Suspected Release to Ground Water ¹ : <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	List Secondary Target Population Served by Ground Water Withdrawn From: 0 - 1/4 Mile _____ >1/4 - 1/2 Mile _____ >1/2 - 1 Mile _____ >1 - 2 Mile _____ >2 - 3 Mile _____ >3 - 4 Mile _____ Total Within 4 Miles ⁴ _____
If Yes, Distance to nearest Drinking Well: _____ Feet	Have Primary Target Drinking Water Wells Been Identified: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Type of Drinking Water Wells Within 4 Miles <input type="checkbox"/> Municipal <input type="checkbox"/> Private <input checked="" type="checkbox"/> None	If Yes, Enter Primary Target Population: _____ People ³	
Depth to Shallowest Aquifer: _____ Feet	Nearest Designated Wellhead Protection Area ⁶ : <input type="checkbox"/> Underlies Site <input type="checkbox"/> >0-4 Miles <input checked="" type="checkbox"/> None Within 4 Miles	
Karst Terrain/Aquifer Present: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		*Use population #'s for PA Table 2
8. Surface Water Pathway - NA		
Type of Surface Water Draining Site and 15 Miles Downstream (check all that apply): <input type="checkbox"/> Stream <input type="checkbox"/> River <input type="checkbox"/> Pond <input type="checkbox"/> Lake <input type="checkbox"/> Bay <input type="checkbox"/> Ocean <input type="checkbox"/> Other _____	Shortest Overland Distance From Any Source to Surface Water: _____ Feet _____ Miles	
Is There a Suspected Release to Surface Water ¹ : <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Site is Located in: <input type="checkbox"/> Annual - 10 yr Floodplain <input type="checkbox"/> >10yr - 100yr Floodplain <input type="checkbox"/> >100yr - 500yr Floodplain <input type="checkbox"/> >500yr Floodplain	
Drinking Water Intake Located Along the Surface Water Migration Path: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	List All Secondary Target Drinking Water Intakes: Name: _____ Water Body: _____ Flow (cfs): _____ Population Served: _____ _____ _____ _____ _____	
Have Primary Target Drinking Water Intakes Been Identified: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, Distance to Nearest Drinking Water Intake : _____ Miles ⁶		
If Yes, Enter Population Served by Target Intake: _____ People ⁴		
Fisheries Located Along the Surface Water Migration Path: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, Distance to Nearest Fishery: _____ Miles	List All Secondary Target Fisheries ¹⁰ : Water Body/ Fishery Name: _____ Flow (cfs): _____ _____ _____ _____	
Have Primary Target Fisheries Been Identified: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		

8. Surface Water Pathway (continued)		
Wetlands Located Along the Surface Water Migration Path:	Other Sensitive Environments Located Along the Surface Water Migration Path: <input type="checkbox"/> Yes If Yes, Distance to Nearest Sensitive Environment: _____ Miles <input type="checkbox"/> No	
Have Primary Target Wetlands Been Identified: <input type="checkbox"/> Yes <input type="checkbox"/> No	Have Primary Target Sensitive Environments Been Identified: <input type="checkbox"/> Yes <input type="checkbox"/> No	
List All Wetlands: <u>Water Body</u> : _____ <u>Flow (cfs)</u> : _____ <u>Frontage miles</u> : _____ _____ _____	List All Sensitive Environments ¹¹ : <u>Water Body</u> : _____ <u>Flow (cfs)</u> : _____ <u>Sensitive Environment Type</u> : _____ _____ _____	
9. Soil Exposure Pathway - NA		
Are People Occupying Residence or Attending School or Daycare on or Within 200 Feet of Area of Known or Suspected Contamination: <input type="checkbox"/> Yes <input type="checkbox"/> No	Number of Workers Onsite ⁴ : <input type="checkbox"/> None <input type="checkbox"/> 1 - 100 <input type="checkbox"/> 101 - 1,000 <input type="checkbox"/> > 1,000	Have Terrestrial Sensitive Environments Been Identified on or Within 200 Feet of Areas of Known or Suspected Contamination: <input type="checkbox"/> Yes <input type="checkbox"/> No
If Yes, Enter Total Residential Population: _____ People ²	Population Within 1 Mile: _____ People ⁷	If Yes, List Each Terrestrial Sensitive Environment ⁵ : _____ _____ _____
*Refer to PA Table 7 for environment types		
10. Air Pathway - NA		
Is there a Suspected Release to Air ¹ : <input type="checkbox"/> Yes <input type="checkbox"/> No	Wetlands Located Within 4 Miles of the Site ⁶ : <input type="checkbox"/> Yes If Yes, How Many Acres: _____ Acres <input type="checkbox"/> No	
Enter Total Population on or Within: Onsite _____ 0-1/4 Mile _____ >1/4-1/2 Mile _____ >1/2-1 Mile _____ >1-2 Miles _____ >2-3 Miles _____ >3-4 Miles _____ Total Within 4 Miles ³⁻⁵ _____	Other Sensitive Environments Located Within 4 Miles of the Site: <input type="checkbox"/> Yes <input type="checkbox"/> No	
	List All Sensitive Environments Within 1/2 Mile of the Site ⁶ : Distance: <u>Sensitive Environment Type/Wetlands Area (acres)</u> : Onsite _____ 0-1/4 Mile _____ >1/4-1/2 Mile _____	

¹⁻¹¹ Refers to question number on PA pathway scoresheets

Potential Hazardous Waste Site Preliminary Assessment Form						Identification	
						State:	CERCLIS #:
						CERCLIS Discovery Date:	
1. General Site Information							
Name: Hangar 125		Street Address: NA					
City: Cannon AFB		State: NM	Zip Code: 88103	County: Curry	Co. Code: 9	Cong. Dist: 3	
Latitude: 34°23'14.89"	Longitude: 103°19'37.72"	Approximate Area of Site: _____ Acres _____,950 Square Ft		Status of Site: <input checked="" type="checkbox"/> Active <input type="checkbox"/> Not Specified <input type="checkbox"/> Inactive <input type="checkbox"/> NA (GW plume, etc.)			
<p>Site Description: Hangar 125 is located in the west central portion of Cannon AFB. The fire suppression systems serving the hangar bays consist of an overhead wet pipe sprinkler system and an underwing AFFF system. The underwing AFFF system is comprised of a series of nozzle cannons placed along the hangar bay walls that point towards parked aircraft. The system is activated by a manual discharge station serving the hangar bay. All systems are currently operational and are tested every two years using approximately one gallon of AFFF concentrate. Discharge from the hangar bay is routed to a floor trench along the edge of the bay or to a storm drain inlet on the ramp adjacent to the hangar. The floor trench in Hangar 125 is equipped with a valve that automatically closes when the AFFF system is activated in order to keep foam from entering the sanitary sewer system. As AFFF and water accumulate in the trench, the valve can be manually opened to gradually allow liquid to enter the sanitary sewer system.</p> <p>Hangar personnel are required to notify workers at the WWTP when a release of AFFF occurs. WWTP staff can then divert incoming wastewater to a 9 million-gallon storage basin which bypasses the main treatment systems. Wastewater in the basin is then gradually sent to the treatment systems for processing along with regular influent. Effluent from the WWTP is released to the North Playa Lake and the Whispering Winds Golf Course. Additionally, the base water quality manager has authorized AFFF to discharge to the storm sewer drainage system. Storm drains near Hangar 125 convey liquid directly to the South Playa Lake. There is no record of any AFFF being discharged to storm drains at Hangar 125.</p> <p>According to the fire suppression systems manager and base air quality specialist, there was a release of AFFF at Hangar 125 in September 2002 when an electricity generator was started near the hangar and activated the AFFF system. Approximately 110 gallons of AFFF were released to one of the hangar bays and routed to the WWTP. The floor trench valve apparently did not function properly during this release, allowing AFFF to route to the WWTP. Because the release of AFFF in September 2002 was routed to the WWTP and eventually released to its outfalls, no release of AFFF to the environment has occurred at Hangar 125.</p>							
2. Owner/Operator Information							
Owner: Cannon AFB		Operator: Same as "Owner"					
Street Address:		Street Address:					
City: Cannon AFB		City:					
State: NM	Zip Code: 88103	Telephone:	State:	Zip Code:	Telephone:		
Type of Ownership: <input type="checkbox"/> Private <input checked="" type="checkbox"/> Federal Agency Name: <u>DOD</u> <input type="checkbox"/> State <input type="checkbox"/> Indian			Type of Ownership: <input type="checkbox"/> County <input type="checkbox"/> Municipal <input checked="" type="checkbox"/> Not Specified <input type="checkbox"/> Other _____				
3. Site Evaluator Information							
Name of Evaluator: Ryan McVickers		Agency/Organization: HydroGeoLogic, Inc.			Date Prepared: 08/01/2015		
Street Address: 340 E. Palm Lane, Ste. A240			City: Phoenix		State: Arizona		
Name of EPA or State Agency Contact: NA			Street Address:				
City:		State:		Telephone:			

4. Site Disposition (for EPA use only)			
Emergency Response/Removal Assessment Recommendation: <input type="checkbox"/> Yes <input type="checkbox"/> No Date: _____		CERCLIS Recommendation: <input type="checkbox"/> Higher Priority SI <input type="checkbox"/> Lower Priority SI <input type="checkbox"/> NFRAP <input type="checkbox"/> RCRA <input type="checkbox"/> Other: _____ Date: _____	Signature: Name (typed): Position:
5. General Site Characteristics - NA			
Predominant Land Use Within 1 Mile of Site (check all that apply): <input type="checkbox"/> Industrial <input type="checkbox"/> Commercial <input type="checkbox"/> Residential <input type="checkbox"/> Forest/Fields <input type="checkbox"/> Agriculture <input type="checkbox"/> Mining <input type="checkbox"/> DOD <input type="checkbox"/> DOE <input type="checkbox"/> DOI <input type="checkbox"/> Other Federal Facility <input type="checkbox"/> Other _____		Site Setting: <input type="checkbox"/> Urban <input type="checkbox"/> Suburban <input checked="" type="checkbox"/> Rural	Years of Operation: Beginning Year _____ Ending Year _____ <input type="checkbox"/> Unknown
Type of Site Operations (check all that apply): <input type="checkbox"/> Manufacturing (must check subcategory) <input type="checkbox"/> Lumber and Wood Products <input type="checkbox"/> Inorganic Chemicals <input type="checkbox"/> Plastic and/or Rubber Products <input type="checkbox"/> Paints, Varnishes <input type="checkbox"/> Industrial Organic Chemicals <input type="checkbox"/> Agricultural Chemicals <input type="checkbox"/> Miscellaneous Chemical Products <input type="checkbox"/> Primary Metals <input type="checkbox"/> Metal Coating, Plating, Engraving <input type="checkbox"/> Metal Forging, Stamping <input type="checkbox"/> Fabricated Structural Metal Products <input checked="" type="checkbox"/> Electronic Equipment <input type="checkbox"/> Other Manufacturing <input type="checkbox"/> Mining <input type="checkbox"/> Metals <input type="checkbox"/> Coal <input type="checkbox"/> Oil and Gas <input type="checkbox"/> Non-metallic Minerals		Waste Generated: <input type="checkbox"/> Retail <input type="checkbox"/> Recycling <input type="checkbox"/> Junk/Salvage Yard <input type="checkbox"/> Municipal Landfill <input type="checkbox"/> Other Landfill <input type="checkbox"/> DOD <input type="checkbox"/> DOE <input type="checkbox"/> DOI <input type="checkbox"/> Other Federal Facility _____ <input type="checkbox"/> RCRA <input type="checkbox"/> Treatment, Storage, or Disposal <input type="checkbox"/> Large Quantity Generator <input type="checkbox"/> Small Quantity Generator <input type="checkbox"/> Subtitle D <input type="checkbox"/> Municipal <input checked="" type="checkbox"/> Industrial <input type="checkbox"/> "Converter" <input type="checkbox"/> "Protective Filer" <input type="checkbox"/> "Non-or Late Filer" <input type="checkbox"/> Note Specified <input type="checkbox"/> Other _____	Waste Deposition Authorized By: <input type="checkbox"/> Present Owner <input type="checkbox"/> Former Owner <input type="checkbox"/> Present & Former Owner <input type="checkbox"/> Unauthorized <input type="checkbox"/> Unknown
		Waste Accessible to the Public: <input type="checkbox"/> Yes <input type="checkbox"/> No	Distance to Nearest Dwelling, School, or Workplace: _____ Feet
6. Waste Characteristics Information - NA			
(Refer to PA Table 1 for WC Score)			
Source Type: (check all that apply)	Source Waste Quantity: (include unit)	Tier*: _____	General Type of Waste (check all that apply): <input type="checkbox"/> Landfill <input type="checkbox"/> Surface Impoundment <input type="checkbox"/> Drums <input type="checkbox"/> Tanks and Non-Dum Containers <input type="checkbox"/> Chemical Waste Pile <input type="checkbox"/> Scrap Metal or Junk Pile <input type="checkbox"/> Tailings Pile <input type="checkbox"/> Trash Pile (open drum) <input type="checkbox"/> Land Treatment <input type="checkbox"/> Contaminated GW Plume (unidentified source) <input type="checkbox"/> Contaminated SW/Sediment (unidentified source) <input type="checkbox"/> Contaminated Soil <input type="checkbox"/> Other _____ <input type="checkbox"/> No Sources
			 <input type="checkbox"/> Metals <input type="checkbox"/> Organics <input type="checkbox"/> Inorganics <input type="checkbox"/> Solvents <input type="checkbox"/> Paints/Pigments <input type="checkbox"/> Laboratory/Hospital Waste <input type="checkbox"/> Radioactive Waste <input type="checkbox"/> Construction/Demolition Waste <input type="checkbox"/> Pesticides/Herbicides <input type="checkbox"/> Acids/Bases <input type="checkbox"/> Oily Waste <input type="checkbox"/> Municipal Waste <input type="checkbox"/> Mining Waste <input type="checkbox"/> Explosives <input type="checkbox"/> Other _____
			Physical State of Waste as Deposited (check all that apply): <input type="checkbox"/> Solid <input type="checkbox"/> Sludge <input type="checkbox"/> Powder <input type="checkbox"/> Liquid <input type="checkbox"/> Gas

*C=Constituent, W=Wastestream, V=Volume, A=Area

8. Surface Water Pathway - NA (Continued)		
Wetlands Located Along the Surface Water Migration Path:		Other Sensitive Environments Located Along the Surface Water Migration Path:
<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, Distance to Nearest Sensitive Environment: _____ Miles
Have Primary Target Wetlands Been Identified:		
<input type="checkbox"/> Yes <input type="checkbox"/> No		Have Primary Target Sensitive Environments Been Identified:
<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No
List All Wetlands:		
<u>Water Body</u> : <u>Flow (cfs)</u> : <u>Frontage miles</u> :		List All Sensitive Environments ¹¹ :
<hr/> <hr/> <hr/> <hr/>		<hr/> <hr/> <hr/> <hr/>
9. Soil Exposure Pathway - NA		
Are People Occupying Residence or Attending School or Daycare on or Within 200 Feet of Area of Known or Suspected Contamination:	Number of Workers Onsite ⁴ :	Have Terrestrial Sensitive Environments Been Identified on or Within 200 Feet of Areas of Known or Suspected Contamination:
	<input type="checkbox"/> None <input type="checkbox"/> 1 - 100 <input type="checkbox"/> 101 - 1,000 <input type="checkbox"/> > 1,000	
If Yes, Enter Total Residential Population: _____ People ²	Population Within 1 Mile: _____ People ⁷	<input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, List Each Terrestrial Sensitive Environment ⁵ : <hr/> <hr/> <hr/>
<small>* Refer to PA Table 7 for environment types</small>		
10. Air Pathway - NA		
Is there a Suspected Release to Air ¹ :	Wetlands Located Within 4 Miles of the Site ⁶ :	
<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	If Yes, How Many Acres: _____ Acres
Enter Total Population on or Within:		
Onsite		
0-1/4 Mile		
>1/4-1/2 Mile		
>1/2-1 Mile		
>1-2 Miles		
>2-3 Miles		
>3-4 Miles		
Total Within 4 Miles ³⁻⁵ _____		
List All Sensitive Environments Within 1/2 Mile of the Site ⁶ :		
<u>Distance</u> : <u>Sensitive Environment Type/Wetlands Area (acres)</u> :		
Onsite		
0-1/4 Mile		
>1/4-1/2 Mile		
<small>* Refer to PA Table 10 for calculations on air pathway exposures</small>		

¹⁻¹¹ Refers to question number on PA pathway scoresheets

Potential Hazardous Waste Site Preliminary Assessment Form						Identification
						State:
						CERCLIS Discovery Date:
1. General Site Information						
Name: Hangar 125		Street Address: NA				
City: Cannon AFB		State: NM	Zip Code: 88103	County: Curry	Co. Code: 9	Cong. Dist: 3
Latitude: 34°23'16.98"	Longitude: 103°19'35.15"	Approximate Area of Site: _____ Acres _____ Square Ft		Status of Site: <input checked="" type="checkbox"/> Active <input type="checkbox"/> Not Specified <input type="checkbox"/> Inactive <input type="checkbox"/> NA (GW plume, etc.)		
<p>Site Description: Hangar 126 is located in the west central portion of Cannon AFB. The fire suppression systems serving the hangar bay consists of an overhead wet pipe sprinkler system and an underwing AFFF system. The underwing AFFF system is comprised of a series of nozzle cannons placed along the hangar bay walls that point towards parked aircraft. The system is activated by a manual discharge station serving the hangar bay. All systems are currently operational and are tested every two years using approximately one gallon of AFFF concentrate.</p> <p>Discharge from the hangar bay is routed to a floor trench along the edge of the bay or to a storm drain inlet on the ramp adjacent to the hangar. The floor trench in Hangar 126 is equipped with a valve that automatically closes when the AFFF system is activated in order to keep foam from entering the sanitary sewer system. As AFFF and water accumulate in the trench, the valve can be manually opened to gradually allow liquid to enter the sanitary sewer system and route to the WWTP.</p> <p>Hangar personnel are required to notify workers at the WWTP when a release of AFFF occurs. WWTP staff can then divert incoming wastewater to a 9 million-gallon storage basin which bypasses the main treatment systems. Wastewater in the basin is then gradually sent to the treatment systems for processing along with regular influent. Effluent from the WWTP is released to the North Playa Lake and the Whispering Winds Golf Course. Additionally, the base water quality manager has authorized AFFF to discharge to the storm sewer drainage system. Storm drains near Hangar 125 convey liquid directly to the South Playa Lake. There is no record of any AFFF being released to storm drains at Hangar 126.</p> <p>According to the fire suppression systems manager and base air quality specialist, there was a release of AFFF at Hangar 126 in November 2000 when an activation of the fire alarm caused a partial discharge from the AFFF system. Approximately 30 gallons of AFFF were discharged from an underwing nozzle in the center of the hangar bay and entered a floor trench. Because the release of AFFF in November 2000 was routed to the WWTP and eventually released to its outfalls, no release of AFFF to the environment has occurred at Hangar 125.</p>						
2. Owner/Operator Information						
Owner: Cannon AFB		Operator: Same as "Owner"				
Street Address:		Street Address:				
City: Cannon AFB		City:				
State: NM	Zip Code: 88103	Telephone:	State:	Zip Code:	Telephone:	
Type of Ownership: <input type="checkbox"/> Private <input type="checkbox"/> County <input checked="" type="checkbox"/> Federal Agency <input type="checkbox"/> Municipal Name: <u>DOD</u> <input checked="" type="checkbox"/> Not Specified <input type="checkbox"/> State <input type="checkbox"/> Other _____ <input type="checkbox"/> Indian			Type of Ownership: <input type="checkbox"/> Private <input type="checkbox"/> County <input type="checkbox"/> Federal Agency <input type="checkbox"/> Municipal Name: _____ <input type="checkbox"/> Not Specified <input type="checkbox"/> State <input type="checkbox"/> Other _____ <input type="checkbox"/> Indian			
3. Site Evaluator Information						
Name of Evaluator: Ryan McVickers	Agency/Organization: HydroGeoLogic, Inc.			Date Prepared: 08/01/2015		
Street Address: 340 E. Palm Lane, Ste. A240		City: Phoenix		State: Arizona		
Name of EPA or State Agency Contact: NA		Street Address:				
City:	State:		Telephone:			

*C=Constituent, W=Wastestream, V=Volume, A=Area

7. Ground Water Pathway - NA		
Is Ground Water Used for Drinking Within 4 Miles: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is There a Suspected Release to Ground Water ¹ : <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	List Secondary Target Population Served by Ground Water Withdrawn From: 0 - 1/4 Mile _____ >1/4 - 1/2 Mile _____ >1/2 - 1 Mile _____ >1 - 2 Mile _____ >2 - 3 Mile _____ >3 - 4 Mile _____ Total Within 4 Miles ⁴ _____
If Yes, Distance to nearest Drinking Well: _____ Feet	Have Primary Target Drinking Water Wells Been Identified: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Type of Drinking Water Wells Within 4 Miles (check all that apply): <input type="checkbox"/> Municipal <input type="checkbox"/> Private <input checked="" type="checkbox"/> None	If Yes, Enter Primary Target Population: _____ People ³	
Depth to Shallowest Aquifer: _____ Feet	Nearest Designated Wellhead Protection Area ⁶ : <input type="checkbox"/> Underlies Site <input type="checkbox"/> >0-4 Miles <input type="checkbox"/> None Within 4 Miles	
Karst Terrain/Aquifer Present: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		*Use population #s for PA Table 2 *Note nearest well for #5 on GW Pathway Scoresheet
8. Surface Water Pathway - NA		
Type of Surface Water Draining Site and 15 Miles Downstream (check all that apply): <input type="checkbox"/> Stream <input type="checkbox"/> River <input type="checkbox"/> Pond <input type="checkbox"/> Lake <input type="checkbox"/> Bay <input type="checkbox"/> Ocean <input type="checkbox"/> Other _____	Shortest Overland Distance From Any Source to Surface Water: _____ Feet _____ Miles	
Is There a Suspected Release to Surface Water ¹ : <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Site is Located in: <input type="checkbox"/> Annual - 10 yr Floodplain <input type="checkbox"/> >10yr - 100yr Floodplain <input type="checkbox"/> >100yr - 500yr Floodplain <input type="checkbox"/> >500yr Floodplain	
Drinking Water Intake Located Along the Surface Water Migration Path: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	List All Secondary Target Drinking Water Intakes: Name: _____ Water Body: _____ Flow (cfs): _____ Population Served: _____ _____ _____ _____ _____ _____ Total within 15 Miles ⁴ _____	
Have Primary Target Drinking Water Intakes Been Identified: <input type="checkbox"/> Yes If Yes, Distance to Nearest Drinking Water Intake : _____ Miles ⁶ <input checked="" type="checkbox"/> No		
If Yes, Enter Population Served by Target Intake: _____ People ⁴		
Fisheries Located Along the Surface Water Migration Path: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, Distance to Nearest Fishery: _____ Miles	List All Secondary Target Fisheries ¹⁰ : Water Body/ Fishery Name: _____ Flow (cfs): _____ _____ _____ _____	
Have Primary Target Fisheries Been Identified: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		

8. Surface Water Pathway (continued)		
Wetlands Located Along the Surface Water Migration Path:		Other Sensitive Environments Located Along the Surface Water Migration Path: <input type="checkbox"/> Yes If Yes, Distance to Nearest Sensitive Environment: _____ Miles <input type="checkbox"/> No
Have Primary Target Wetlands Been Identified: <input type="checkbox"/> Yes <input type="checkbox"/> No		Have Primary Target Sensitive Environments Been Identified: <input type="checkbox"/> Yes <input type="checkbox"/> No
List All Wetlands: <u>Water Body</u> : <u>Flow (cfs)</u> : <u>Frontage miles</u> : <hr/> <hr/> <hr/>		List All Sensitive Environments ¹¹ : <u>Water Body</u> : <u>Flow (cfs)</u> : <u>Sensitive Environment Type</u> : <hr/> <hr/> <hr/>
9. Soil Exposure Pathway - NA		
Are People Occupying Residence or Attending School or Daycare on or Within 200 Feet of Area of Known or Suspected Contamination: <input type="checkbox"/> Yes <input type="checkbox"/> No	Number of Workers Onsite ⁴ : <input type="checkbox"/> None <input type="checkbox"/> 1 - 100 <input type="checkbox"/> 101 - 1,000 <input type="checkbox"/> > 1,000	Have Terrestrial Sensitive Environments Been Identified on or Within 200 Feet of Areas of Known or Suspected Contamination: <input type="checkbox"/> Yes <input type="checkbox"/> No
	Population Within 1 Mile: <hr/> <hr/> <hr/>	If Yes, List Each Terrestrial Sensitive Environment ⁵ : <hr/> <hr/> <hr/>
If Yes, Enter Total Residential Population: <hr/>	People ⁷	* Refer to PA Table 7 for environment types
10. Air Pathway - NA		
Is there a Suspected Release to Air ¹ : <input type="checkbox"/> Yes <input type="checkbox"/> No	Wetlands Located Within 4 Miles of the Site ⁶ : <input type="checkbox"/> Yes If Yes, How Many Acres: _____ Acres <input type="checkbox"/> No	
Enter Total Population on or Within: <u>Onsite</u> _____ <u>0-1/4 Mile</u> _____ <u>>1/4-1/2 Mile</u> _____ <u>>1/2-1 Mile</u> _____ <u>>1-2 Miles</u> _____ <u>>2-3 Miles</u> _____ <u>>3-4 Miles</u> _____ <u>Total Within 4 Miles</u> ³⁻⁵ _____	Other Sensitive Environments Located Within 4 Miles of the Site: <input type="checkbox"/> Yes <input type="checkbox"/> No	
	List All Sensitive Environments Within 1/2 Mile of the Site ⁶ : <u>Distance</u> : <u>Sensitive Environment Type/Wetlands Area (acres)</u> : <u>Onsite</u> _____ <u>0-1/4 Mile</u> _____ <u>>1/4-1/2 Mile</u> _____	
	* Refer to PA Table 10 for calculations on air pathway exposures	

¹⁻¹¹ Refers to question number on PA pathway scoresheets

Potential Hazardous Waste Site Preliminary Assessment Form			Identification	
			State:	CERCLIS #:
			CERCLIS Discovery Date:	
1. General Site Information				
Name: Hangar 133		Street Address: NA		
City: Cannon AFB		State: NM	Zip Code: 88103	County: Curry Co. Code: 9 Cong. Dist: 3
Latitude: 34°23'11.02"	Longitude: 103°19'44.29"	Approximate Area of Site: <u> 5 </u> Acres <u> </u> Square Ft	Status of Site: <input checked="" type="checkbox"/> Active <input type="checkbox"/> Not Specified <input type="checkbox"/> Inactive <input type="checkbox"/> NA (GW plume, etc.)	
<p>Site Description: Hangar 133 is located in the west central portion of Cannon AFB. The fire suppression systems serving the hangar bays consist of an overhead wet pipe sprinkler system and an underwing AFFF system. The underwing AFFF system is comprised of a series of nozzle cannons placed along the hangar bay walls that point towards parked aircraft. The system is activated by a manual discharge station serving the hangar bays. All systems are currently operational and are tested every two years using approximately one gallon of AFFF concentrate.</p> <p>Discharge from the hangar bays is routed to floor trenches along the bay walls or to a storm drain inlet on the ramp adjacent to the hangar. The floor trenches in Hangar 133 are equipped with valves that automatically close when the AFFF system is activated in order to keep foam from immediately entering the sanitary sewer system. As AFFF and water accumulate in the trench, the valve can be manually opened to gradually allow liquid to enter the sanitary sewer system and route to the WWTP. Hangar personnel are required to notify workers at the WWTP when a release of AFFF occurs. WWTP staff can then divert incoming wastewater to a 9 million-gallon storage basin which bypasses the main treatment systems. Wastewater in the basin is then gradually sent to the treatment systems for processing along with regular influent. Effluent from the WWTP is released to the North Playa Lake and the Whispering Winds Golf Course. Additionally, the base water quality manager has authorized AFFF to discharge to the storm sewer drainage system. Storm drains near Hangar 133 convey liquid directly to the South Playa Lake.</p> <p>According to the fire suppression systems manager and base air quality specialist, there have been two accidental releases of AFFF at Hangar 133:</p> <ul style="list-style-type: none"> • In December 2000, “several hundred gallons” of AFFF was released during a scheduled rinsing of the hangar fire system. The liquid entered a nearby storm drain. • In July 2001, approximately 200 gallons of AFFF was released into a hangar bay following a power outage. Most of the AFFF entered a floor trench and was routed to the WWTP. However, foam that did not go down the floor trench was washed to nearby “infield soil.” <p>Because a portion of AFFF released in July 2001 was washed to nearby soil, a release of AFFF to the environment has occurred at Hangar 133.</p>				
2. Owner/Operator Information				
Owner: Cannon AFB		Operator: Same as "Owner"		
Street Address:		Street Address:		
City: Cannon AFB		City:		
State: NM	Zip Code: 88103	Telephone:	State:	Zip Code:
Type of Ownership: <input type="checkbox"/> Private <input checked="" type="checkbox"/> Federal Agency Name: <u>DOD</u> <input type="checkbox"/> State <input type="checkbox"/> Indian		Type of Ownership: <input type="checkbox"/> Private <input type="checkbox"/> Federal Agency Name: _____ <input type="checkbox"/> State <input type="checkbox"/> Indian		

3. Site Evaluator Information		
Name of Evaluator: Ryan McVickers	Agency/Organization: HydroGeoLogic, Inc.	Date Prepared: 07/01/2015
Street Address: 340 E. Palm Lane, Ste. A240	City: Phoenix	State: Arizona
Name of EPA or State Agency Contact: NA	Street Address:	
City:	State:	Telephone:
4. Site Disposition (for EPA use only)		
Emergency Response/Removal Assessment Recommendation: <input type="checkbox"/> Yes <input type="checkbox"/> No Date: _____	CERCLIS Recommendation: <input type="checkbox"/> Higher Priority SI <input type="checkbox"/> Lower Priority SI <input type="checkbox"/> NFRAP <input type="checkbox"/> RCRA <input type="checkbox"/> Other: _____ Date: _____	Signature: Name (typed): Position:
5. General Site Characteristics		
Predominant Land Use Within 1 Mile of Site (check all that apply): <input type="checkbox"/> Industrial <input type="checkbox"/> Agriculture <input type="checkbox"/> DOI <input type="checkbox"/> Commercial <input type="checkbox"/> Mining <input type="checkbox"/> Other Federal <input type="checkbox"/> Residential <input checked="" type="checkbox"/> DOD <input type="checkbox"/> Facility: <input type="checkbox"/> Forest/Fields <input type="checkbox"/> DOE <input type="checkbox"/> Other _____	Site Setting: <input type="checkbox"/> Urban <input type="checkbox"/> Suburban <input checked="" type="checkbox"/> Rural	Years of Operation: Beginning Year <u>1993</u> Ending Year <u>present</u> <input type="checkbox"/> Unknown
Type of Site Operations (check all that apply): <input type="checkbox"/> Manufacturing (must check subcategory) <input type="checkbox"/> Lumber and Wood Products <input type="checkbox"/> Inorganic Chemicals <input type="checkbox"/> Plastic and/or Rubber Products <input type="checkbox"/> Paints, Varnishes <input type="checkbox"/> Industrial Organic Chemicals <input type="checkbox"/> Agricultural Chemicals <input type="checkbox"/> Miscellaneous Chemical Products <input type="checkbox"/> Primary Metals <input type="checkbox"/> Metal Coating, Plating, Engraving <input type="checkbox"/> Metal Forging, Stamping <input type="checkbox"/> Fabricated Structural Metal Products <input checked="" type="checkbox"/> Electronic Equipment <input type="checkbox"/> Other Manufacturing <input type="checkbox"/> Mining <input type="checkbox"/> Metals <input type="checkbox"/> Coal <input type="checkbox"/> Oil and Gas <input type="checkbox"/> Non-metallic Minerals	 <input type="checkbox"/> Retail <input type="checkbox"/> Recycling <input type="checkbox"/> Junk/Salvage Yard <input type="checkbox"/> Municipal Landfill <input type="checkbox"/> Other Landfill <input checked="" type="checkbox"/> DOD <input type="checkbox"/> DOE <input type="checkbox"/> DOI <input type="checkbox"/> Other Federal Facility _____ <input type="checkbox"/> RCRA <input type="checkbox"/> Treatment, Storage, or Disposal <input type="checkbox"/> Large Quantity Generator <input type="checkbox"/> Small Quantity Generator <input type="checkbox"/> Subtitle D <input type="checkbox"/> Municipal <input type="checkbox"/> Industrial <input type="checkbox"/> "Converter" <input type="checkbox"/> "Protective Filer" <input checked="" type="checkbox"/> "Non-or Late Filer" <input type="checkbox"/> Note Specified <input type="checkbox"/> Other _____	Waste Generated: <input checked="" type="checkbox"/> Onsite <input type="checkbox"/> Offsite <input type="checkbox"/> Onsite and Offsite Waste Deposition Authorized By: <input checked="" type="checkbox"/> Present Owner <input type="checkbox"/> Former Owner <input type="checkbox"/> Present & Former Owner <input type="checkbox"/> Unauthorized <input type="checkbox"/> Unknown Waste Accessible to the Public: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Distance to Nearest Dwelling, School, or Workplace: <u>0.75</u> Miles

6. Waste Characteristics Information (Refer to PA Table 1 for WC Score)				
Source Type: (check all that apply)	Source Waste Quantity: (include unit)	Tier*:	General Type of Waste (check all that apply):	
<input type="checkbox"/> Landfill _____	_____	_____	<input type="checkbox"/> Metals _____	<input type="checkbox"/> Pesticides/Herbicides _____
<input type="checkbox"/> Surface Impoundment _____	_____	_____	<input type="checkbox"/> Organics _____	<input type="checkbox"/> Acids/Bases _____
<input type="checkbox"/> Drums _____	_____	_____	<input type="checkbox"/> Inorganics _____	<input type="checkbox"/> Oily Waste _____
<input type="checkbox"/> Tanks and Non-Dum Containers _____	_____	_____	<input type="checkbox"/> Solvents _____	<input type="checkbox"/> Municipal Waste _____
<input type="checkbox"/> Chemical Waste Pile _____	_____	_____	<input type="checkbox"/> Paints/Pigments _____	<input type="checkbox"/> Mining Waste _____
<input type="checkbox"/> Scrap Metal or Junk Pile _____	_____	_____	<input type="checkbox"/> Laboratory/Hospital Waste _____	<input type="checkbox"/> Explosives _____
<input type="checkbox"/> Tailings Pile _____	_____	_____	<input type="checkbox"/> Radioactive Waste _____	<input checked="" type="checkbox"/> Other_AFFF _____
<input type="checkbox"/> Trash Pile (open drum) _____	_____	_____	<input type="checkbox"/> Construction/Demolition Waste _____	
<input type="checkbox"/> Land Treatment _____	_____	_____		
<input type="checkbox"/> Contaminated GW Plume (unidentified source) _____	_____	_____		
<input type="checkbox"/> Contaminated SW/Sediment (unidentified source) _____	_____	_____		
<input checked="" type="checkbox"/> Contaminated Soil _____	_____	_____		
<input type="checkbox"/> Other _____	Unknown _____	_____		
<input type="checkbox"/> No Sources _____				
*C=Constituent, W=Wastestream, V=Volume, A=Area				
Physical State of Waste as Deposited (check all that apply):				
<input type="checkbox"/> Solid _____				
<input type="checkbox"/> Sludge _____				
<input type="checkbox"/> Powder _____				
<input checked="" type="checkbox"/> Liquid _____				
<input type="checkbox"/> Gas _____				
7. Ground Water Pathway				
Is Ground Water Used for Drinking Within 4 Miles: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is There a Suspected Release to Ground Water ¹ : <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	List Secondary Target Population Served by Ground Water Withdrawn From:		
If Yes, Distance to nearest Drinking Well: 0.7 miles Feet	Have Primary Target Drinking Water Wells Been Identified: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	0 - 1/4 Mile	_____	
Type of Drinking Water Wells Within 4 Miles <input checked="" type="checkbox"/> Municipal <input type="checkbox"/> Private <input type="checkbox"/> None	If Yes, Enter Primary Target Population: 6,540 People ³	>1/4 - 1/2 Mile	_____	
Depth to Shallowest Aquifer: _____ Feet	Nearest Designated Wellhead Protection Area ⁶ : <input type="checkbox"/> Underlies Site <input type="checkbox"/> >0-4 Miles <input checked="" type="checkbox"/> None Within 4 Miles	>1/2 - 1 Mile	_____	
Karst Terrain/Aquifer Present: <input type="checkbox"/> Yes <input type="checkbox"/> No		>1 - 2 Mile	_____	
		>2 - 3 Mile	_____	
		>3 - 4 Mile	_____	
		Total Within 4 Miles ⁴	6,540	
*Use population #'s for PA Table 2				
*Note nearest well for #5 on GW Pathway Scoresheet				

9. Soil Exposure Pathway		
Are People Occupying Residence or Attending School or Daycare on or Within 200 Feet of Area of Known or Suspected Contamination: _____ People ²	Number of Workers Onsite ⁴ : <input type="checkbox"/> None <input checked="" type="checkbox"/> 1 - 100 <input type="checkbox"/> 101 - 1,000 <input type="checkbox"/> > 1,000	Have Terrestrial Sensitive Environments Been Identified on or Within 200 Feet of Areas of Known or Suspected Contamination: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
	Population Within 1 Mile: _____ People ⁷	If Yes, List Each Terrestrial Sensitive Environment ⁵ : _____ _____ _____
<small>*Refer to PA Table 7 for environment types</small>		
10. Air Pathway		
Is there a Suspected Release to Air ¹ : <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Wetlands Located Within 4 Miles of the Site ⁶ : <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, How Many Acres: _____ Acres	
Enter Total Population on or Within: Onsite _____ 0-1/4 Mile _____ >1/4-1/2 Mile _____ >1/2-1 Mile _____ >1-2 Miles _____ >2-3 Miles _____ >3-4 Miles _____ Total Within 4 Miles ³⁻⁵ _____	Other Sensitive Environments Located Within 4 Miles of the Site: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
List All Sensitive Environments Within 1/2 Mile of the Site ⁶ : <u>Distance:</u> <u>Sensitive Environment Type/Wetlands Area (acres):</u> Onsite _____ 0-1/4 Mile _____ >1/4-1/2 Mile _____		
<small>*Refer to PA Table 10 for calculations on air pathway exposures</small>		

¹⁻¹¹ Refers to question number on PA pathway scoresheets

Potential Hazardous Waste Site Preliminary Assessment Form			Identification	
			State:	CERCLIS #:
			CERCLIS Discovery Date:	
1. General Site Information				
Name: Hangar 197		Street Address: NA		
City: Cannon AFB		State: NM	Zip Code: 88103	County: Curry Co. Code: 9 Cong. Dist: 3
Latitude: 34°23'47.17"	Longitude: 103°18'59.00"	Approximate Area of Site: _____ Acres _____ 16,650 _____ Square Ft	Status of Site: <input checked="" type="checkbox"/> Active <input type="checkbox"/> Not Specified <input type="checkbox"/> Inactive <input type="checkbox"/> NA (GW plume, etc.)	
<p>Site Description: Hangar 197 is located in the north central portion of Cannon AFB. The fire suppression systems serving the hangar bays consist of an overhead wet pipe sprinkler system and an underwing AFFF system. The underwing AFFF system is comprised of a series of nozzle cannons placed along the hangar bay walls that point towards parked aircraft. The system is activated by a manual discharge station serving the hangar bays. All systems are currently operational and are tested every two years using approximately one gallon of AFFF concentrate</p> <p>Discharge from the hangar bays is routed to floor trenches along the bay walls or to a storm drain inlet on the ramp adjacent to the hangar. The floor trenches in Hangar 197 are equipped with valves that automatically closes when the AFFF system is activated in order to keep foam from immediately entering the sanitary sewer system. As AFFF and water accumulate in the trench, the valve can be manually opened to gradually allow liquid to enter the sanitary sewer system and route to the WWTP.</p> <p>Hangar personnel are required to notify workers at the WWTP when a release of AFFF occurs. WWTP staff can then divert incoming wastewater to a 9 million-gallon storage basin which bypasses the main treatment systems. Wastewater in the basin is then gradually sent to the treatment systems for processing along with regular influent. Effluent from the WWTP is released to the North Playa Lake and the Whispering Winds Golf Course. Additionally, the base water quality manager has authorized AFFF to discharge to the storm sewer drainage system. Storm drains near Hangar 197 convey liquid directly to the South Playa Lake. According to the fire suppression systems manager and base air quality specialist, there have been two accidental releases of AFFF at Hangar 197:</p> <ul style="list-style-type: none"> • In December 2000, an unknown quantity of AFFF was released to a nearby storm drain when a valve broke during routine testing. • In April 2005, an unknown quantity of AFFF was released into a hangar bay from two underwing nozzles. The cause of the release is not known, but "some" AFFF may have entered a floor trench and been routed to the WWTP. It is unclear if the floor trench valve was activated, but no foam was observed at the WWTP or North Playa Lake. <p>Because the releases of AFFF at Hangar 197 would have been routed to the WWTP or South Playa Lake, there was no evidence of a release of AFFF to the environment at the time of the assessment.</p>				
2. Owner/Operator Information				
Owner: Cannon AFB		Operator: Same as "Owner"		
Street Address:		Street Address:		
City: Cannon AFB		City:		
State: NM	Zip Code: 88103	Telephone:	State:	Zip Code:
Type of Ownership: <input type="checkbox"/> Private <input checked="" type="checkbox"/> Federal Agency Name: <u>DOD</u> <input type="checkbox"/> State <input type="checkbox"/> Indian		Type of Ownership: <input type="checkbox"/> Private <input type="checkbox"/> County <input type="checkbox"/> Municipal <input checked="" type="checkbox"/> Not Specified <input type="checkbox"/> Other _____ <input type="checkbox"/> State <input type="checkbox"/> County <input type="checkbox"/> Municipal <input checked="" type="checkbox"/> Not Specified <input type="checkbox"/> Other _____ <input type="checkbox"/> Indian		

3. Site Evaluator Information		
Name of Evaluator: Ryan McVickers	Agency/Organization: HydroGeoLogic, Inc.	Date Prepared: 08/01/2015
Street Address: 340 E. Palm Lane, Ste. A240	City: Phoenix	State: Arizona
Name of EPA or State Agency Contact: NA	Street Address:	
City:	State:	Telephone:
4. Site Disposition (for EPA use only)		
Emergency Response/Removal Assessment Recommendation: <input type="checkbox"/> Yes <input type="checkbox"/> No Date: _____	CERCLIS Recommendation: <input type="checkbox"/> Higher Priority SI <input type="checkbox"/> Lower Priority SI <input type="checkbox"/> NFRAP <input type="checkbox"/> RCRA <input type="checkbox"/> Other: _____ Date: _____	Signature: Name (typed): Position:
5. General Site Characteristics - NA		
Predominant Land Use Within 1 Mile of Site (check all that apply): <input type="checkbox"/> Industrial <input type="checkbox"/> Agriculture <input type="checkbox"/> DOI <input type="checkbox"/> Commercial <input type="checkbox"/> Mining <input type="checkbox"/> Other Federal <input type="checkbox"/> Residential <input type="checkbox"/> DOD <input type="checkbox"/> Facility: <input type="checkbox"/> Forest/Fields <input type="checkbox"/> DOE <input type="checkbox"/> Other _____	Site Setting: <input type="checkbox"/> Urban <input type="checkbox"/> Suburban <input checked="" type="checkbox"/> Rural	Years of Operation: Beginning Year _____ Ending Year _____ <input type="checkbox"/> Unknown
Type of Site Operations (check all that apply): <input type="checkbox"/> Manufacturing (must check subcategory) <input type="checkbox"/> Lumber and Wood Products <input type="checkbox"/> Inorganic Chemicals <input type="checkbox"/> Plastic and/or Rubber Products <input type="checkbox"/> Paints, Varnishes <input type="checkbox"/> Industrial Organic Chemicals <input type="checkbox"/> Agricultural Chemicals <input type="checkbox"/> Miscellaneous Chemical Products <input type="checkbox"/> Primary Metals <input type="checkbox"/> Metal Coating, Plating, Engraving <input type="checkbox"/> Metal Forging, Stamping <input type="checkbox"/> Fabricated Structural Metal Products <input type="checkbox"/> Electronic Equipment <input type="checkbox"/> Other Manufacturing <input type="checkbox"/> Mining <input type="checkbox"/> Metals <input type="checkbox"/> Coal <input type="checkbox"/> Oil and Gas <input type="checkbox"/> Non-metallic Minerals	 <input type="checkbox"/> Retail <input type="checkbox"/> Recycling <input type="checkbox"/> Junk/Salvage Yard <input type="checkbox"/> Municipal Landfill <input type="checkbox"/> Other Landfill <input type="checkbox"/> DOD <input type="checkbox"/> DOE <input type="checkbox"/> DOI <input type="checkbox"/> Other Federal Facility _____ <input type="checkbox"/> RCRA <input type="checkbox"/> Treatment, Storage, or Disposal <input type="checkbox"/> Large Quantity Generator <input type="checkbox"/> Small Quantity Generator <input type="checkbox"/> Subtitle D <input type="checkbox"/> Municipal <input type="checkbox"/> Industrial <input type="checkbox"/> "Converter" <input type="checkbox"/> "Protective Filer" <input type="checkbox"/> "Non-or Late Filer" <input type="checkbox"/> Note Specified <input type="checkbox"/> Other _____	Waste Generated: <input type="checkbox"/> Onsite <input type="checkbox"/> Offsite <input type="checkbox"/> Onsite and Offsite Waste Deposition Authorized By: <input type="checkbox"/> Present Owner <input type="checkbox"/> Former Owner <input type="checkbox"/> Present & Former Owner <input type="checkbox"/> Unauthorized <input type="checkbox"/> Unknown Waste Accessible to the Public: <input type="checkbox"/> Yes <input type="checkbox"/> No Distance to Nearest Dwelling, School, or Workplace: _____ Feet

6. Waste Characteristics Information - NA			
(Refer to PA Table 1 for WC Score)			
Source Type: (check all that apply)	Source Waste Quantity: (include unit)	Tier*:	General Type of Waste (check all that apply):
<input type="checkbox"/> Landfill	_____	_____	<input type="checkbox"/> Pesticides/Herbicides
<input type="checkbox"/> Surface Impoundment	_____	_____	<input type="checkbox"/> Acids/Bases
<input type="checkbox"/> Drums	_____	_____	<input type="checkbox"/> Oily Waste
<input type="checkbox"/> Tanks and Non-Dum Containers	_____	_____	<input type="checkbox"/> Municipal Waste
<input type="checkbox"/> Chemical Waste Pile	_____	_____	<input type="checkbox"/> Mining Waste
<input type="checkbox"/> Scrap Metal or Junk Pile	_____	_____	<input type="checkbox"/> Explosives
<input type="checkbox"/> Tailings Pile	_____	_____	<input type="checkbox"/> Other _____
<input type="checkbox"/> Trash Pile (open drum)	_____	_____	
<input type="checkbox"/> Land Treatment	_____	_____	
<input type="checkbox"/> Contaminated GW Plume (unidentified source)	_____	_____	
<input type="checkbox"/> Contaminated SW/Sediment (unidentified source)	_____	_____	
<input type="checkbox"/> Contaminated Soil	_____	_____	
<input type="checkbox"/> Other _____	_____	_____	
<input type="checkbox"/> No Sources	_____	_____	

*C=Constituent, W=Wastestream, V=Volume, A=Area

Physical State of Waste as Deposited (check all that apply):

- Solid
- Sludge
- Powder
- Liquid
- Gas

7. Ground Water Pathway - NA

Is Ground Water Used for Drinking Within 4 Miles: <input type="checkbox"/> Yes <input type="checkbox"/> No	Is There a Suspected Release to Ground Water ¹ : <input type="checkbox"/> Yes <input type="checkbox"/> No	List Secondary Target Population Served by Ground Water Withdrawn From: 0 - 1/4 Mile _____ >1/4 - 1/2 Mile _____ >1/2 - 1 Mile _____ >1 - 2 Mile _____ >2 - 3 Mile _____ >3 - 4 Mile _____ Total Within 4 Miles ⁴ _____
If Yes, Distance to nearest Drinking Well: _____ Feet	Have Primary Target Drinking Water Wells Been Identified: <input type="checkbox"/> Yes <input type="checkbox"/> No	
Type of Drinking Water Wells Within 4 Miles <input type="checkbox"/> Municipal <input type="checkbox"/> Private <input type="checkbox"/> None	If Yes, Enter Primary Target Population: _____ People ³	
Depth to Shallowest Aquifer: _____ Feet	Nearest Designated Wellhead Protection Area ⁶ : <input type="checkbox"/> Underlies Site <input type="checkbox"/> >0-4 Miles <input type="checkbox"/> None Within 4 Miles	
Karst Terrain/Aquifer Present: <input type="checkbox"/> Yes <input type="checkbox"/> No		*Use population #s for PA Table 2 *Note nearest well for #5 on GW Pathway Scoresheet

8. Surface Water Pathway - NA	
Type of Surface Water Draining Site and 15 Miles Downstream (check all that apply): <input type="checkbox"/> Stream <input type="checkbox"/> River <input type="checkbox"/> Pond <input type="checkbox"/> Lake <input type="checkbox"/> Bay <input type="checkbox"/> Ocean <input type="checkbox"/> Other _____	Shortest Overland Distance From Any Source to Surface Water: _____ Feet _____ Miles
Is There a Suspected Release to Surface Water ¹ : <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Site is Located in: <input type="checkbox"/> Annual - 10 yr Floodplain <input type="checkbox"/> >10yr - 100yr Floodplain <input type="checkbox"/> >100yr - 500yr Floodplain <input type="checkbox"/> >500yr Floodplain
Drinking Water Intake Located Along the Surface Water Migration Path: <input type="checkbox"/> Yes <input type="checkbox"/> No	List All Secondary Target Drinking Water Intakes: <u>Name:</u> <u>Water Body:</u> <u>Flow (cfs):</u> <u>Population Served:</u> _____ _____ _____ _____ _____ _____ _____ _____ Total within 15 Miles ⁴ _____
Have Primary Target Drinking Water Intakes Been Identified: <input type="checkbox"/> Yes If Yes, Distance to Nearest Drinking Water Intake : _____ Miles ⁶ <input type="checkbox"/> No	List All Secondary Target Fisheries ¹⁰ : <u>Water Body/ Fishery Name :</u> <u>Flow (cfs):</u> _____ _____ _____
If Yes, Enter Population Served by Target Intake: _____ People ⁴	
Fisheries Located Along the Surface Water Migration Path: <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, Distance to Nearest Fishery: _____ Miles	
Have Primary Target Fisheries Been Identified: <input type="checkbox"/> Yes <input type="checkbox"/> No	
Wetlands Located Along the Surface Water Migration Path: <input type="checkbox"/> Yes <input type="checkbox"/> No	Other Sensitive Environments Located Along the Surface Water Migration Path: <input type="checkbox"/> Yes If Yes, Distance to Nearest Sensitive Environment: _____ Miles <input type="checkbox"/> No
Have Primary Target Wetlands Been Identified: <input type="checkbox"/> Yes <input type="checkbox"/> No	Have Primary Target Sensitive Environments Been Identified: <input type="checkbox"/> Yes <input type="checkbox"/> No
List All Wetlands: <u>Water Body :</u> <u>Flow (cfs):</u> <u>Frontage miles:</u> _____ _____ _____	List All Sensitive Environments ¹¹ : <u>Water Body :</u> <u>Flow (cfs):</u> <u>Sensitive Environment Type:</u> _____ _____ _____

9. Soil Exposure Pathway - NA		
Are People Occupying Residence or Attending School or Daycare on or Within 200 Feet of Area of Known or Suspected Contamination: <input type="checkbox"/> Yes <input type="checkbox"/> No	Number of Workers Onsite ⁴ : <input type="checkbox"/> None <input type="checkbox"/> 1 - 100 <input type="checkbox"/> 101 - 1,000 <input type="checkbox"/> > 1,000	Have Terrestrial Sensitive Environments Been Identified on or Within 200 Feet of Areas of Known or Suspected Contamination: <input type="checkbox"/> Yes <input type="checkbox"/> No
	If Yes, Enter Total Residential Population: <hr style="width: 100px; margin-left: 0;"/> <p>_____ People²</p>	Population Within 1 Mile: <hr style="width: 100px; margin-left: 0;"/> <p>_____ People⁷</p>
10. Air Pathway - NA		
Is there a Suspected Release to Air ¹ : <input type="checkbox"/> Yes <input type="checkbox"/> No	Wetlands Located Within 4 Miles of the Site ⁶ : <input type="checkbox"/> Yes If Yes, How Many Acres: _____ Acres <input type="checkbox"/> No	
Enter Total Population on or Within: Onsite _____ 0-1/4 Mile _____ >1/4-1/2 Mile _____ >1/2-1 Mile _____ >1-2 Miles _____ >2-3 Miles _____ >3-4 Miles _____ Total Within 4 Miles ³⁻⁵ _____	Other Sensitive Environments Located Within 4 Miles of the Site: <input type="checkbox"/> Yes <input type="checkbox"/> No	
	List All Sensitive Environments Within 1/2 Mile of the Site ⁶ : <u>Distance:</u> <u>Sensitive Environment Type/Wetlands Area (acres):</u> Onsite _____ 0-1/4 Mile _____ >1/4-1/2 Mile _____	
	*Refer to PA Table 10 for calculations on air pathway exposures	

¹⁻¹¹ Refers to question number on PA pathway scoresheets

Potential Hazardous Waste Site Preliminary Assessment Form						Identification
						State:
1. General Site Information						
Name: Hangar 199		Street Address: NA				
City: Cannon AFB		State: NM	Zip Code: 88103	County: Curry	Co. Code: 9	Cong. Dist: 3
Latitude: 34°23'51.99"	Longitude: 103°18'53.29"	Approximate Area of Site: _____ Acres _____,648 _____ Square Ft		Status of Site: <input checked="" type="checkbox"/> Active <input type="checkbox"/> Not Specified <input type="checkbox"/> Inactive <input type="checkbox"/> NA (GW plume, etc.)		
<p>Site Description: Hangar 199 is located in the north central portion of Cannon AFB. In approximately 1999, the hangar's AFFF system was removed and replaced with an HEF system. Discharge from the hangar bays is routed to floor trenches along the bay walls or to a storm drain inlet on the ramp adjacent to the hangar. The floor trenches in Hangar 199 are equipped with valves that would have automatically closed when the AFFF system was activated in order to keep foam from immediately entering the sanitary sewer system. As AFFF and water accumulated in the trenches, the valve would have been manually opened to gradually allow liquid to enter the sanitary sewer system.</p> <p>Prior to the construction of the WWTP in 1998, the sanitary sewer system drained to the former sewage lagoons. Currently, hangar personnel are required to notify workers at the WWTP when a release of AFFF occurs. WWTP staff can then divert incoming wastewater to a 9 million-gallon storage basin which bypasses the main treatment systems. Wastewater in the basin is then gradually sent to the treatment systems for processing along with regular influent. Effluent from the WWTP is released to the North Playa Lake and the Whispering Winds Golf Course. Additionally, the base water quality manager has authorized AFFF to discharge to the storm sewer drainage system. Storm drains near Hangar 199 convey liquid directly to the South Playa Lake. There have been three accidental releases of AFFF at Hangar 199:</p> <ul style="list-style-type: none"> • In June 1994, approximately 50 gallons of AFFF were discharged to a storm drain outside of hangar bay number 2. The cause of the release is unknown. • In May 1996, approximately 12 gallons of AFFF were discharged at Hangar 199. The cause of the release is known, although AFFF would have entered a floor trench or storm drain. • In June 1996, approximately 200 gallons of AFFF were released at Hangar 199. The cause of the release is known, and it is unclear if AFFF entered a floor trench or storm drain. <p>Because the releases of AFFF at Hangar 199 occurred before the construction of the WWTP, AFFF would have been routed to the former sewage lagoons or South Playa Lake. As such, there was no evidence of a release of AFFF to the environment at Hangar 199.</p>						
2. Owner/Operator Information						
Owner: Cannon AFB		Operator: Same as "Owner"				
Street Address:		Street Address:				
City: Cannon AFB		City:				
State: NM	Zip Code: 88103	Telephone:	State:	Zip Code:	Telephone:	
Type of Ownership: <input type="checkbox"/> Private <input checked="" type="checkbox"/> Federal Agency Name: <u>DOD</u> <input type="checkbox"/> State <input type="checkbox"/> Indian			Type of Ownership: <input type="checkbox"/> County <input type="checkbox"/> Municipal <input checked="" type="checkbox"/> Not Specified <input type="checkbox"/> Other _____			

3. Site Evaluator Information		
Name of Evaluator: Ryan McVickers	Agency/Organization: HydroGeoLogic, Inc.	Date Prepared: 08/01/2015
Street Address: 340 E. Palm Lane, Ste. A240		City: Phoenix State: Arizona
Name of EPA or State Agency Contact: NA		Street Address:
City:	State:	Telephone:
4. Site Disposition (for EPA use only)		
Emergency Response/Removal Assessment Recommendation: <input type="checkbox"/> Yes <input type="checkbox"/> No Date: _____		CERCLIS Recommendation: <input type="checkbox"/> Higher Priority SI <input type="checkbox"/> Lower Priority SI <input type="checkbox"/> NFRAP <input type="checkbox"/> RCRA <input type="checkbox"/> Other: _____ Date: _____
5. General Site Characteristics - NA		
Predominant Land Use Within 1 Mile of Site (check all that apply): <input type="checkbox"/> Industrial <input type="checkbox"/> Agriculture <input type="checkbox"/> DOI <input type="checkbox"/> Commercial <input type="checkbox"/> Mining <input type="checkbox"/> Other Federal <input type="checkbox"/> Residential <input type="checkbox"/> DOD <input type="checkbox"/> Facility: <input type="checkbox"/> Forest/Fields <input type="checkbox"/> DOE <input type="checkbox"/> Other _____		Site Setting: <input type="checkbox"/> Urban <input type="checkbox"/> Suburban <input checked="" type="checkbox"/> Rural
		Years of Operation: Beginning Year _____ Ending Year _____ <input type="checkbox"/> Unknown
Type of Site Operations (check all that apply): <input type="checkbox"/> Manufacturing (must check subcategory) <ul style="list-style-type: none"> <input type="checkbox"/> Lumber and Wood Products <input type="checkbox"/> Inorganic Chemicals <input type="checkbox"/> Plastic and/or Rubber Products <input type="checkbox"/> Paints, Varnishes <input type="checkbox"/> Industrial Organic Chemicals <input type="checkbox"/> Agricultural Chemicals <input type="checkbox"/> Miscellaneous Chemical Products <input type="checkbox"/> Primary Metals <input type="checkbox"/> Metal Coating, Plating, Engraving <input type="checkbox"/> Metal Forging, Stamping <input type="checkbox"/> Fabricated Structural Metal Products <input type="checkbox"/> Electronic Equipment <input type="checkbox"/> Other Manufacturing <input type="checkbox"/> Mining <ul style="list-style-type: none"> <input type="checkbox"/> Metals <input type="checkbox"/> Coal <input type="checkbox"/> Oil and Gas <input type="checkbox"/> Non-metallic Minerals 		Waste Generated: <input type="checkbox"/> Onsite <input type="checkbox"/> Offsite <input type="checkbox"/> Onsite and Offsite Waste Deposition Authorized By: <input type="checkbox"/> Present Owner <input type="checkbox"/> Former Owner <input type="checkbox"/> Present & Former Owner <input type="checkbox"/> Unauthorized <input type="checkbox"/> Unknown Waste Accessible to the Public: <input type="checkbox"/> Yes <input type="checkbox"/> No Distance to Nearest Dwelling, School, or Workplace: _____ Feet

6. Waste Characteristics Information - NA (Refer to PA Table 1 for WC Score)			
Source Type: (check all that apply)	Source Waste Quantity: (include unit)	Tier*:	General Type of Waste (check all that apply):
<input type="checkbox"/> Landfill <input type="checkbox"/> Surface Impoundment <input type="checkbox"/> Drums <input type="checkbox"/> Tanks and Non-Dum Containers <input type="checkbox"/> Chemical Waste Pile <input type="checkbox"/> Scrap Metal or Junk Pile <input type="checkbox"/> Tailings Pile <input type="checkbox"/> Trash Pile (open drum) <input type="checkbox"/> Land Treatment <input type="checkbox"/> Contaminated GW Plume (unidentified source) <input type="checkbox"/> Contaminated SW/Sediment (unidentified source) <input type="checkbox"/> Contaminated Soil <input type="checkbox"/> Other _____ <input type="checkbox"/> No Sources	_____	_____	<input checked="" type="checkbox"/> Metals <input type="checkbox"/> Organics <input checked="" type="checkbox"/> Inorganics <input type="checkbox"/> Solvents <input type="checkbox"/> Paints/Pigments <input type="checkbox"/> Laboratory/Hospital Waste <input type="checkbox"/> Radioactive Waste <input type="checkbox"/> Pesticides/Herbicides <input type="checkbox"/> Acids/Bases <input type="checkbox"/> Oily Waste <input type="checkbox"/> Municipal Waste <input type="checkbox"/> Mining Waste <input type="checkbox"/> Explosives <input type="checkbox"/> Other _____
Physical State of Waste as Deposited (check all that apply): <input type="checkbox"/> Solid <input type="checkbox"/> Sludge <input type="checkbox"/> Powder <input type="checkbox"/> Liquid <input type="checkbox"/> Gas			
<small>*C=Constituent, W=Wastestream, V=Volume, A=Area</small>			
7. Ground Water Pathway - NA			
Is Ground Water Used for Drinking Within 4 Miles: <input type="checkbox"/> Yes <input type="checkbox"/> No	Is There a Suspected Release to Ground Water ¹ : <input type="checkbox"/> Yes <input type="checkbox"/> No	List Secondary Target Population Served by Ground Water Withdrawn From: 0 - 1/4 Mile _____ >1/4 - 1/2 Mile _____ >1/2 - 1 Mile _____ >1 - 2 Mile _____ >2 - 3 Mile _____ >3 - 4 Mile _____ Total Within 4 Miles ⁴ _____	
If Yes, Distance to nearest Drinking Well: _____ Feet	Have Primary Target Drinking Water Wells Been Identified: <input type="checkbox"/> Yes <input type="checkbox"/> No	Type of Drinking Water Wells Within 4 Miles (check all that apply): <input type="checkbox"/> Municipal <input type="checkbox"/> Private <input type="checkbox"/> None	
If Yes, Enter Primary Target Population: _____ People ³			
Depth to Shallowest Aquifer: _____ Feet	Nearest Designated Wellhead Protection Area ⁶ : <input type="checkbox"/> Underlies Site <input type="checkbox"/> >0-4 Miles <input type="checkbox"/> None Within 4 Miles	Karst Terrain/Aquifer Present: <input type="checkbox"/> Yes <input type="checkbox"/> No	
<small>*Use population #s for PA Table 2 *Note nearest well for #5 on GW Pathway Scoresheet</small>			

9. Soil Exposure Pathway - NA			
Are People Occupying Residence or Attending School or Daycare on or Within 200 Feet of Area of Known or Suspected Contamination: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Number of Workers Onsite ⁴ : <input type="checkbox"/> None <input type="checkbox"/> 1 - 100 <input type="checkbox"/> 101 - 1,000 <input type="checkbox"/> > 1,000	Have Terrestrial Sensitive Environments Been Identified on or Within 200 Feet of Areas of Known or Suspected Contamination: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
	Population Within 1 Mile: <hr style="width: 100px; margin-left: 0;"/> People⁷	If Yes, List Each Terrestrial Sensitive Environment ⁵ : <hr style="width: 100px; margin-left: 0;"/> <hr style="width: 100px; margin-left: 0;"/> <hr style="width: 100px; margin-left: 0;"/>	
10. Air Pathway - NA			
Is there a Suspected Release to Air ¹ : <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Wetlands Located Within 4 Miles of the Site ⁶ : <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If Yes, How Many Acres: _____ Acres	
	Enter Total Population on or Within: Onsite _____ 0-1/4 Mile _____ >1/4-1/2 Mile _____ >1/2-1 Mile _____ >1-2 Miles _____ >2-3 Miles _____ >3-4 Miles _____ Total Within 4 Miles ³⁻⁵ _____		Other Sensitive Environments Located Within 4 Miles of the Site: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
	List All Sensitive Environments Within 1/2 Mile of the Site ⁶ : <u>Distance:</u> <u>Sensitive Environment Type/Wetlands Area (acres):</u> Onsite _____ 0-1/4 Mile _____ >1/4-1/2 Mile _____		
	*Refer to PA Table 7 for environment types		

¹⁻¹¹ Refers to question number on PA pathway scoresheets

Potential Hazardous Waste Site Preliminary Assessment Form						Identification
						State:
						CERCLIS Discovery Date:
1. General Site Information						
Name: Hangar 204		Street Address: NA				
City: Cannon AFB		State: NM	Zip Code: 88103	County: Curry	Co. Code: 9	Cong. Dist: 3
Latitude: 34°23'54.01"	Longitude: 103°18'50.03"	Approximate Area of Site: <hr/> Acres <hr/> 17,295 Square Ft		Status of Site: <input checked="" type="checkbox"/> Active <input type="checkbox"/> Not Specified <input type="checkbox"/> Inactive <input type="checkbox"/> NA (GW plume, etc.)		
<p>Site Description: Hangar 204 is located in the north central portion of Cannon AFB. The fire suppression systems serving the hangar bays consist of an overhead wet pipe sprinkler system and an underwing AFFF system. The underwing AFFF system is comprised of a series of nozzle cannons placed along the hangar bay walls that point towards parked aircraft. The system is activated by a manual discharge station serving the hangar bays. All systems are currently operational and are tested every two years using approximately one gallon of AFFF concentrate.</p> <p>Discharge from the hangar bays is routed to floor trenches along the bay walls or to a storm drain inlet on the ramp adjacent to the hangar. The floor trenches in Hangar 204 are equipped with valves that automatically closes when the AFFF system is activated in order to keep foam from immediately entering the sanitary sewer system. As AFFF and water accumulate in the trenches, the valve can be manually opened to gradually allow liquid to enter the sanitary sewer system and route to the WWTP.</p> <p>Hangar personnel are required to notify workers at the WWTP when a release of AFFF occurs. WWTP staff can then divert incoming wastewater to a 9 million-gallon storage basin which bypasses the main treatment systems. Wastewater in the basin is then gradually sent to the treatment systems for processing along with regular influent. Additionally, the base water quality manager has authorized AFFF to discharge to the storm sewer drainage system. Storm drains near Hangar 204 convey liquid directly to the South Playa Lake. There has been one accidental discharge of AFFF at Hangar 204. In May 2002, the AFFF system was activated when the building heater caused a bird nest to catch fire. Approximately 700 gallons of AFFF were discharged onto a nearby concrete ramp and was left to evaporate. There was no evidence that AFFF reached the WWTP, South Playa Lake, or the grassy areas surrounding the hangar.</p> <p>Because the release of AFFF at Hangar 204 evaporated or would have been routed to the WWTP or South Playa Lake, there was no evidence of a release of AFFF to the environment at the time of the assessment.</p>						
2. Owner/Operator Information						
Owner: Cannon AFB		Operator: Same as "Owner"				
Street Address:		Street Address:				
City: Cannon AFB		City:				
State: NM	Zip Code: 88103	Telephone:	State:	Zip Code:	Telephone:	
Type of Ownership: <input type="checkbox"/> Private <input checked="" type="checkbox"/> Federal Agency <input type="checkbox"/> Name: <u>DOD</u> <input type="checkbox"/> State <input type="checkbox"/> Indian			Type of Ownership: <input type="checkbox"/> Private <input type="checkbox"/> County <input type="checkbox"/> Municipal <input checked="" type="checkbox"/> Not Specified <input type="checkbox"/> Other _____ <input type="checkbox"/> State <input type="checkbox"/> County <input type="checkbox"/> Municipal <input type="checkbox"/> Not Specified <input type="checkbox"/> Other _____			

3. Site Evaluator Information		
Name of Evaluator: Ryan McVickers	Agency/Organization: HydroGeoLogic, Inc.	Date Prepared: 08/01/2015
Street Address: 340 E. Palm Lane, Ste. A240	City: Phoenix	State: Arizona
Name of EPA or State Agency Contact: NA	Street Address:	
City:	State:	Telephone:
4. Site Disposition (for EPA use only)		
Emergency Response/Removal Assessment Recommendation: <input type="checkbox"/> Yes <input type="checkbox"/> No Date: _____	CERCLIS Recommendation: <input type="checkbox"/> Higher Priority SI <input type="checkbox"/> Lower Priority SI <input type="checkbox"/> NFRAP <input type="checkbox"/> RCRA <input type="checkbox"/> Other: _____ Date: _____	Signature: Name (typed): Position:
5. General Site Characteristics - NA		
Predominant Land Use Within 1 Mile of Site (check all that apply): <input type="checkbox"/> Industrial <input type="checkbox"/> Agriculture <input type="checkbox"/> DOI <input type="checkbox"/> Commercial <input type="checkbox"/> Mining <input type="checkbox"/> Other Federal <input type="checkbox"/> Residential <input type="checkbox"/> DOD <input type="checkbox"/> Facility: <input type="checkbox"/> Forest/Fields <input type="checkbox"/> DOE <input type="checkbox"/> Other _____	Site Setting: <input type="checkbox"/> Urban <input type="checkbox"/> Suburban <input checked="" type="checkbox"/> Rural	Years of Operation: Beginning Year _____ Ending Year _____ <input checked="" type="checkbox"/> Unknown
Type of Site Operations (check all that apply): <input type="checkbox"/> Manufacturing (must check subcategory) <input type="checkbox"/> Lumber and Wood Products <input type="checkbox"/> Inorganic Chemicals <input type="checkbox"/> Plastic and/or Rubber Products <input type="checkbox"/> Paints, Varnishes <input type="checkbox"/> Industrial Organic Chemicals <input type="checkbox"/> Agricultural Chemicals <input type="checkbox"/> Miscellaneous Chemical Products <input type="checkbox"/> Primary Metals <input type="checkbox"/> Metal Coating, Plating, Engraving <input type="checkbox"/> Metal Forging, Stamping <input type="checkbox"/> Fabricated Structural Metal Products <input type="checkbox"/> Electronic Equipment <input type="checkbox"/> Other Manufacturing <input type="checkbox"/> Mining <input type="checkbox"/> Metals <input type="checkbox"/> Coal <input type="checkbox"/> Oil and Gas <input type="checkbox"/> Non-metallic Minerals	 <input type="checkbox"/> Retail <input type="checkbox"/> Recycling <input type="checkbox"/> Junk/Salvage Yard <input type="checkbox"/> Municipal Landfill <input type="checkbox"/> Other Landfill <input type="checkbox"/> DOD <input type="checkbox"/> DOE <input type="checkbox"/> DOI <input type="checkbox"/> Other Federal Facility _____ <input type="checkbox"/> RCRA <input type="checkbox"/> Treatment, Storage, or Disposal <input type="checkbox"/> Large Quantity Generator <input type="checkbox"/> Small Quantity Generator <input type="checkbox"/> Subtitle D <input type="checkbox"/> Municipal <input type="checkbox"/> Industrial <input type="checkbox"/> "Converter" <input type="checkbox"/> "Protective Filer" <input type="checkbox"/> "Non-or Late Filer" <input type="checkbox"/> Note Specified <input type="checkbox"/> Other _____	Waste Generated: <input type="checkbox"/> Onsite <input type="checkbox"/> Offsite <input type="checkbox"/> Onsite and Offsite Waste Deposition Authorized By: <input type="checkbox"/> Present Owner <input type="checkbox"/> Former Owner <input type="checkbox"/> Present & Former Owner <input type="checkbox"/> Unauthorized <input type="checkbox"/> Unknown Waste Accessible to the Public: <input type="checkbox"/> Yes <input type="checkbox"/> No
		Distance to Nearest Dwelling, School, or Workplace: _____ Feet

6. Waste Characteristics Information - NA			
(Refer to PA Table 1 for WC Score)			
Source Type: (check all that apply)	Source Waste Quantity: (include unit)	Tier*:	General Type of Waste (check all that apply):
<input type="checkbox"/> Landfill <input type="checkbox"/> Surface Impoundment <input type="checkbox"/> Drums <input type="checkbox"/> Tanks and Non-Dum Containers <input type="checkbox"/> Chemical Waste Pile <input type="checkbox"/> Scrap Metal or Junk Pile <input type="checkbox"/> Tailings Pile <input type="checkbox"/> Trash Pile (open drum) <input type="checkbox"/> Land Treatment <input type="checkbox"/> Contaminated GW Plume (unidentified source) <input type="checkbox"/> Contaminated SW/Sediment (unidentified source) <input type="checkbox"/> Contaminated Soil <input type="checkbox"/> Other _____ <input type="checkbox"/> No Sources	_____	_____	<input type="checkbox"/> Metals <input type="checkbox"/> Organics <input type="checkbox"/> Inorganics <input type="checkbox"/> Solvents <input type="checkbox"/> Paints/Pigments <input type="checkbox"/> Laboratory/Hospital Waste <input type="checkbox"/> Radioactive Waste <input checked="" type="checkbox"/> Construction/Demolition Waste <input type="checkbox"/> Pesticides/Herbicides <input type="checkbox"/> Acids/Bases <input type="checkbox"/> Oily Waste <input type="checkbox"/> Municipal Waste <input type="checkbox"/> Mining Waste <input type="checkbox"/> Explosives <input type="checkbox"/> Other _____
Physical State of Waste as Deposited (check all that apply):			
<input type="checkbox"/> Solid <input type="checkbox"/> Sludge <input type="checkbox"/> Powder <input type="checkbox"/> Liquid <input type="checkbox"/> Gas			
<small>*C=Constituent, W=Wastestream, V=Volume, A=Area</small>			

7. Ground Water Pathway - NA			
Is Ground Water Used for Drinking Within 4 Miles: <input type="checkbox"/> Yes <input type="checkbox"/> No	Is There a Suspected Release to Ground Water ¹ : <input type="checkbox"/> Yes <input type="checkbox"/> No	List Secondary Target Population Served by Ground Water Withdrawn From:	
		0 - 1/4 Mile	_____
		>1/4 - 1/2 Mile	_____
		>1/2 - 1 Mile	_____
		>1 - 2 Mile	_____
		>2 - 3 Mile	_____
		>3 - 4 Mile	_____
		Total Within 4 Miles ⁴	_____
If Yes, Distance to nearest Drinking Well: _____ Feet			
Type of Drinking Water Wells Within 4 Miles <input type="checkbox"/> Municipal <input type="checkbox"/> Private <input type="checkbox"/> None	Have Primary Target Drinking Water Wells Been Identified: <input type="checkbox"/> Yes <input type="checkbox"/> No	If Yes, Enter Primary Target Population: _____ People ³	
Depth to Shallowest Aquifer: _____ Feet	Nearest Designated Wellhead Protection Area ⁶ :	<input type="checkbox"/> Underlies Site <input type="checkbox"/> >0-4 Miles <input type="checkbox"/> None Within 4 Miles	
Karst Terrain/Aquifer Present: <input type="checkbox"/> Yes <input type="checkbox"/> No			
<small>*Use population #s for PA Table 2</small> <small>*Note nearest well for #5 on GW Pathway Scoresheet</small>			

8. Surface Water Pathway - NA		
Type of Surface Water Draining Site and 15 Miles Downstream (check all that apply): <input type="checkbox"/> Stream <input type="checkbox"/> River <input type="checkbox"/> Pond <input type="checkbox"/> Lake <input type="checkbox"/> Bay <input type="checkbox"/> Ocean <input type="checkbox"/> Other _____	Shortest Overland Distance From Any Source to Surface Water: _____ Feet _____ Miles	
Is There a Suspected Release to Surface Water ¹ : <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Site is Located in: <input type="checkbox"/> Annual - 10 yr Floodplain <input type="checkbox"/> >10yr - 100yr Floodplain <input type="checkbox"/> >100yr - 500yr Floodplain <input type="checkbox"/> >500yr Floodplain	
Drinking Water Intake Located Along the Surface Water Migration Path: <input type="checkbox"/> Yes <input type="checkbox"/> No	List All Secondary Target Drinking Water Intakes: <u>Name:</u> _____ <u>Water Body:</u> _____ <u>Flow (cfs):</u> _____ <u>Population Served:</u> _____ _____ _____ _____ _____	
Have Primary Target Drinking Water Intakes Been Identified: <input type="checkbox"/> Yes If Yes, Distance to Nearest Drinking Water Intake : _____ Miles ⁶ <input type="checkbox"/> No		
If Yes, Enter Population Served by Target Intake: _____ People ⁴	Total within 15 Miles ⁴ _____	
Fisheries Located Along the Surface Water Migration Path: <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, Distance to Nearest Fishery: _____ Miles	List All Secondary Target Fisheries ¹⁰ : <u>Water Body/ Fishery Name :</u> _____ <u>Flow (cfs):</u> _____ _____ _____	
Have Primary Target Fisheries Been Identified: <input type="checkbox"/> Yes <input type="checkbox"/> No		
Wetlands Located Along the Surface Water Migration Path: <input type="checkbox"/> Yes <input type="checkbox"/> No	Other Sensitive Environments Located Along the Surface Water Migration Path: <input type="checkbox"/> Yes If Yes, Distance to Nearest Sensitive Environment: _____ Miles <input type="checkbox"/> No	
Have Primary Target Wetlands Been Identified: <input type="checkbox"/> Yes <input type="checkbox"/> No	Have Primary Target Sensitive Environments Been Identified: <input type="checkbox"/> Yes <input type="checkbox"/> No	
List All Wetlands: <u>Water Body :</u> _____ <u>Flow (cfs):</u> _____ <u>Frontage miles:</u> _____ _____ _____ _____	List All Sensitive Environments ¹¹ : <u>Water Body :</u> _____ <u>Flow (cfs):</u> _____ <u>Sensitive Environment Type:</u> _____ _____ _____ _____	

9. Soil Exposure Pathway - NA		
Are People Occupying Residence or Attending School or Daycare on or Within 200 Feet of Area of Known or Suspected Contamination: <input type="checkbox"/> Yes <input type="checkbox"/> No	Number of Workers Onsite ⁴ : <input type="checkbox"/> None <input type="checkbox"/> 1 - 100 <input type="checkbox"/> 101 - 1,000 <input type="checkbox"/> > 1,000	Have Terrestrial Sensitive Environments Been Identified on or Within 200 Feet of Areas of Known or Suspected Contamination: <input type="checkbox"/> Yes <input type="checkbox"/> No
	If Yes, Enter Total Residential Population: <hr style="width: 100px; margin-left: 0;"/> _____ People ²	Population Within 1 Mile: <hr style="width: 100px; margin-left: 0;"/> _____ People ⁷
*Refer to PA Table 7 for environment types		
10. Air Pathway - NA		
Is there a Suspected Release to Air ¹ : <input type="checkbox"/> Yes <input type="checkbox"/> No	Wetlands Located Within 4 Miles of the Site ⁶ : <input type="checkbox"/> Yes <input type="checkbox"/> No	If Yes, How Many Acres: _____ Acres
Enter Total Population on or Within: Onsite _____ 0-1/4 Mile _____ >1/4-1/2 Mile _____ >1/2-1 Mile _____ >1-2 Miles _____ >2-3 Miles _____ >3-4 Miles _____ Total Within 4 Miles ³⁻⁵ _____	Other Sensitive Environments Located Within 4 Miles of the Site: <input type="checkbox"/> Yes <input type="checkbox"/> No	List All Sensitive Environments Within 1/2 Mile of the Site ⁶ : <u>Distance:</u> <u>Sensitive Environment Type/Wetlands Area (acres):</u> Onsite _____ 0-1/4 Mile _____ >1/4-1/2 Mile _____
*Refer to PA Table 10 for calculations on air pathway exposures		

¹⁻¹¹ Refers to question number on PA pathway scoresheets

Potential Hazardous Waste Site Preliminary Assessment Form						Identification
						State:
						CERCLIS Discovery Date:
1. General Site Information						
Name: Hangar 204		Street Address: NA				
City: Cannon AFB		State: NM	Zip Code: 88103	County: Curry	Co. Code: 9	Cong. Dist: 3
Latitude: 34°23'54.01"	Longitude: 103°18'50.03"	Approximate Area of Site: <hr/> Acres <hr/> 17,295 Square Ft		Status of Site: <input checked="" type="checkbox"/> Active <input type="checkbox"/> Not Specified <input type="checkbox"/> Inactive <input type="checkbox"/> NA (GW plume, etc.)		
<p>Site Description: Hangar 204 is located in the north central portion of Cannon AFB. The fire suppression systems serving the hangar bays consist of an overhead wet pipe sprinkler system and an underwing AFFF system. The underwing AFFF system is comprised of a series of nozzle cannons placed along the hangar bay walls that point towards parked aircraft. The system is activated by a manual discharge station serving the hangar bays. All systems are currently operational and are tested every two years using approximately one gallon of AFFF concentrate.</p> <p>Discharge from the hangar bays is routed to floor trenches along the bay walls or to a storm drain inlet on the ramp adjacent to the hangar. The floor trenches in Hangar 204 are equipped with valves that automatically closes when the AFFF system is activated in order to keep foam from immediately entering the sanitary sewer system. As AFFF and water accumulate in the trenches, the valve can be manually opened to gradually allow liquid to enter the sanitary sewer system and route to the WWTP.</p> <p>Hangar personnel are required to notify workers at the WWTP when a release of AFFF occurs. WWTP staff can then divert incoming wastewater to a 9 million-gallon storage basin which bypasses the main treatment systems. Wastewater in the basin is then gradually sent to the treatment systems for processing along with regular influent. Additionally, the base water quality manager has authorized AFFF to discharge to the storm sewer drainage system. Storm drains near Hangar 204 convey liquid directly to the South Playa Lake. There has been one accidental discharge of AFFF at Hangar 204. In May 2002, the AFFF system was activated when the building heater caused a bird nest to catch fire. Approximately 700 gallons of AFFF were discharged onto a nearby concrete ramp and was left to evaporate. There was no evidence that AFFF reached the WWTP, South Playa Lake, or the grassy areas surrounding the hangar.</p> <p>Because the release of AFFF at Hangar 204 evaporated or would have been routed to the WWTP or South Playa Lake, there was no evidence of a release of AFFF to the environment at the time of the assessment.</p>						
2. Owner/Operator Information						
Owner: Cannon AFB		Operator: Same as "Owner"				
Street Address:		Street Address:				
City: Cannon AFB		City:				
State: NM	Zip Code: 88103	Telephone:	State:	Zip Code:	Telephone:	
Type of Ownership: <input type="checkbox"/> Private <input checked="" type="checkbox"/> Federal Agency <input type="checkbox"/> Name: <u>DOD</u> <input type="checkbox"/> State <input type="checkbox"/> Indian			Type of Ownership: <input type="checkbox"/> Private <input type="checkbox"/> County <input type="checkbox"/> Municipal <input checked="" type="checkbox"/> Not Specified <input type="checkbox"/> Other _____ <input type="checkbox"/> State <input type="checkbox"/> County <input type="checkbox"/> Municipal <input type="checkbox"/> Not Specified <input type="checkbox"/> Other _____			

3. Site Evaluator Information		
Name of Evaluator: Ryan McVickers	Agency/Organization: HydroGeoLogic, Inc.	Date Prepared: 08/01/2015
Street Address: 340 E. Palm Lane, Ste. A240	City: Phoenix	State: Arizona
Name of EPA or State Agency Contact: NA	Street Address:	
City:	State:	Telephone:
4. Site Disposition (for EPA use only)		
Emergency Response/Removal Assessment Recommendation: <input type="checkbox"/> Yes <input type="checkbox"/> No Date: _____	CERCLIS Recommendation: <input type="checkbox"/> Higher Priority SI <input type="checkbox"/> Lower Priority SI <input type="checkbox"/> NFRAP <input type="checkbox"/> RCRA <input type="checkbox"/> Other: _____ Date: _____	Signature: Name (typed): Position:
5. General Site Characteristics - NA		
Predominant Land Use Within 1 Mile of Site (check all that apply): <input type="checkbox"/> Industrial <input type="checkbox"/> Agriculture <input type="checkbox"/> DOI <input type="checkbox"/> Commercial <input type="checkbox"/> Mining <input type="checkbox"/> Other Federal <input type="checkbox"/> Residential <input type="checkbox"/> DOD <input type="checkbox"/> Facility: <input type="checkbox"/> Forest/Fields <input type="checkbox"/> DOE <input type="checkbox"/> Other _____	Site Setting: <input type="checkbox"/> Urban <input type="checkbox"/> Suburban <input checked="" type="checkbox"/> Rural	Years of Operation: Beginning Year _____ Ending Year _____ <input checked="" type="checkbox"/> Unknown
Type of Site Operations (check all that apply): <input type="checkbox"/> Manufacturing (must check subcategory) <input type="checkbox"/> Lumber and Wood Products <input type="checkbox"/> Inorganic Chemicals <input type="checkbox"/> Plastic and/or Rubber Products <input type="checkbox"/> Paints, Varnishes <input type="checkbox"/> Industrial Organic Chemicals <input type="checkbox"/> Agricultural Chemicals <input type="checkbox"/> Miscellaneous Chemical Products <input type="checkbox"/> Primary Metals <input type="checkbox"/> Metal Coating, Plating, Engraving <input type="checkbox"/> Metal Forging, Stamping <input type="checkbox"/> Fabricated Structural Metal Products <input type="checkbox"/> Electronic Equipment <input type="checkbox"/> Other Manufacturing <input type="checkbox"/> Mining <input type="checkbox"/> Metals <input type="checkbox"/> Coal <input type="checkbox"/> Oil and Gas <input type="checkbox"/> Non-metallic Minerals	 <input type="checkbox"/> Retail <input type="checkbox"/> Recycling <input type="checkbox"/> Junk/Salvage Yard <input type="checkbox"/> Municipal Landfill <input type="checkbox"/> Other Landfill <input type="checkbox"/> DOD <input type="checkbox"/> DOE <input type="checkbox"/> DOI <input type="checkbox"/> Other Federal Facility _____ <input type="checkbox"/> RCRA <input type="checkbox"/> Treatment, Storage, or Disposal <input type="checkbox"/> Large Quantity Generator <input type="checkbox"/> Small Quantity Generator <input type="checkbox"/> Subtitle D <input type="checkbox"/> Municipal <input type="checkbox"/> Industrial <input type="checkbox"/> "Converter" <input type="checkbox"/> "Protective Filer" <input type="checkbox"/> "Non-or Late Filer" <input type="checkbox"/> Note Specified <input type="checkbox"/> Other _____	Waste Generated: <input type="checkbox"/> Onsite <input type="checkbox"/> Offsite <input type="checkbox"/> Onsite and Offsite Waste Deposition Authorized By: <input type="checkbox"/> Present Owner <input type="checkbox"/> Former Owner <input type="checkbox"/> Present & Former Owner <input type="checkbox"/> Unauthorized <input type="checkbox"/> Unknown Waste Accessible to the Public: <input type="checkbox"/> Yes <input type="checkbox"/> No
		Distance to Nearest Dwelling, School, or Workplace: _____ Feet

6. Waste Characteristics Information - NA			
(Refer to PA Table 1 for WC Score)			
Source Type: (check all that apply)	Source Waste Quantity: (include unit)	Tier*:	General Type of Waste (check all that apply):
<input type="checkbox"/> Landfill <input type="checkbox"/> Surface Impoundment <input type="checkbox"/> Drums <input type="checkbox"/> Tanks and Non-Dum Containers <input type="checkbox"/> Chemical Waste Pile <input type="checkbox"/> Scrap Metal or Junk Pile <input type="checkbox"/> Tailings Pile <input type="checkbox"/> Trash Pile (open drum) <input type="checkbox"/> Land Treatment <input type="checkbox"/> Contaminated GW Plume (unidentified source) <input type="checkbox"/> Contaminated SW/Sediment (unidentified source) <input type="checkbox"/> Contaminated Soil <input type="checkbox"/> Other _____ <input type="checkbox"/> No Sources	_____	_____	<input type="checkbox"/> Metals <input type="checkbox"/> Organics <input type="checkbox"/> Inorganics <input type="checkbox"/> Solvents <input type="checkbox"/> Paints/Pigments <input type="checkbox"/> Laboratory/Hospital Waste <input type="checkbox"/> Radioactive Waste <input checked="" type="checkbox"/> Construction/Demolition Waste <input type="checkbox"/> Pesticides/Herbicides <input type="checkbox"/> Acids/Bases <input type="checkbox"/> Oily Waste <input type="checkbox"/> Municipal Waste <input type="checkbox"/> Mining Waste <input type="checkbox"/> Explosives <input type="checkbox"/> Other _____
Physical State of Waste as Deposited (check all that apply):			
<input type="checkbox"/> Solid <input type="checkbox"/> Sludge <input type="checkbox"/> Powder <input type="checkbox"/> Liquid <input type="checkbox"/> Gas			
<small>*C=Constituent, W=Wastestream, V=Volume, A=Area</small>			

7. Ground Water Pathway - NA			
Is Ground Water Used for Drinking Within 4 Miles: <input type="checkbox"/> Yes <input type="checkbox"/> No	Is There a Suspected Release to Ground Water ¹ : <input type="checkbox"/> Yes <input type="checkbox"/> No	List Secondary Target Population Served by Ground Water Withdrawn From:	
		0 - 1/4 Mile	_____
		>1/4 - 1/2 Mile	_____
		>1/2 - 1 Mile	_____
		>1 - 2 Mile	_____
		>2 - 3 Mile	_____
		>3 - 4 Mile	_____
		Total Within 4 Miles ⁴	_____
If Yes, Distance to nearest Drinking Well: _____ Feet			
Type of Drinking Water Wells Within 4 Miles: <input type="checkbox"/> Municipal <input type="checkbox"/> Private <input type="checkbox"/> None	Have Primary Target Drinking Water Wells Been Identified: <input type="checkbox"/> Yes <input type="checkbox"/> No	If Yes, Enter Primary Target Population: _____ People ³	
Depth to Shallowest Aquifer: _____ Feet	Nearest Designated Wellhead Protection Area ⁶ :	<input type="checkbox"/> Underlies Site <input type="checkbox"/> >0-4 Miles <input type="checkbox"/> None Within 4 Miles	
Karst Terrain/Aquifer Present: <input type="checkbox"/> Yes <input type="checkbox"/> No			
<small>*Use population #s for PA Table 2</small> <small>*Note nearest well for #5 on GW Pathway Scoresheet</small>			

8. Surface Water Pathway - NA			
Type of Surface Water Draining Site and 15 Miles Downstream (check all that apply):	Shortest Overland Distance From Any Source to Surface Water:		
<input type="checkbox"/> Stream <input type="checkbox"/> River <input type="checkbox"/> Pond <input type="checkbox"/> Lake <input type="checkbox"/> Bay <input type="checkbox"/> Ocean <input type="checkbox"/> Other _____	_____ Feet _____ Miles		
Is There a Suspected Release to Surface Water ¹ :	Site is Located in:		
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Annual - 10 yr Floodplain <input type="checkbox"/> >10yr - 100yr Floodplain <input type="checkbox"/> >100yr - 500yr Floodplain <input type="checkbox"/> >500yr Floodplain		
Drinking Water Intake Located Along the Surface Water Migration Path:	List All Secondary Target Drinking Water Intakes:		
<input type="checkbox"/> Yes <input type="checkbox"/> No	<u>Name:</u> _____ <u>Water Body:</u> _____ <u>Flow (cfs):</u> _____ <u>Population Served:</u> _____ _____ _____ _____ _____		
Have Primary Target Drinking Water Intakes Been Identified:			
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, Distance to Nearest Drinking Water Intake : _____ Miles ⁶			
If Yes, Enter Population Served by Target Intake: _____ People ⁴	Total within 15 Miles ⁴ _____		
Fisheries Located Along the Surface Water Migration Path: <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, Distance to Nearest Fishery: _____ Miles	List All Secondary Target Fisheries ¹⁰ : <u>Water Body/ Fishery Name :</u> _____ <u>Flow (cfs):</u> _____ _____ _____ _____		
Have Primary Target Fisheries Been Identified: <input type="checkbox"/> Yes <input type="checkbox"/> No			
Wetlands Located Along the Surface Water Migration Path: <input type="checkbox"/> Yes <input type="checkbox"/> No	Other Sensitive Environments Located Along the Surface Water Migration Path: <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, Distance to Nearest Sensitive Environment: _____ Miles		
Have Primary Target Wetlands Been Identified: <input type="checkbox"/> Yes <input type="checkbox"/> No	Have Primary Target Sensitive Environments Been Identified: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
List All Wetlands: <u>Water Body :</u> _____ <u>Flow (cfs):</u> _____ <u>Frontage miles:</u> _____	List All Sensitive Environments ¹¹ : <u>Water Body :</u> _____ <u>Flow (cfs):</u> _____ <u>Sensitive Environment Type:</u> _____ _____ _____ _____ _____		

9. Soil Exposure Pathway - NA		
Are People Occupying Residence or Attending School or Daycare on or Within 200 Feet of Area of Known or Suspected Contamination: <input type="checkbox"/> Yes <input type="checkbox"/> No	Number of Workers Onsite ⁴ : <input type="checkbox"/> None <input type="checkbox"/> 1 - 100 <input type="checkbox"/> 101 - 1,000 <input type="checkbox"/> > 1,000	Have Terrestrial Sensitive Environments Been Identified on or Within 200 Feet of Areas of Known or Suspected Contamination: <input type="checkbox"/> Yes <input type="checkbox"/> No
	If Yes, Enter Total Residential Population: <hr style="width: 100px; margin-left: 0;"/> _____ People ²	Population Within 1 Mile: <hr style="width: 100px; margin-left: 0;"/> _____ People ⁷
*Refer to PA Table 7 for environment types		
10. Air Pathway - NA		
Is there a Suspected Release to Air ¹ : <input type="checkbox"/> Yes <input type="checkbox"/> No	Wetlands Located Within 4 Miles of the Site ⁶ : <input type="checkbox"/> Yes <input type="checkbox"/> No	If Yes, How Many Acres: _____ Acres
Enter Total Population on or Within: Onsite _____ 0-1/4 Mile _____ >1/4-1/2 Mile _____ >1/2-1 Mile _____ >1-2 Miles _____ >2-3 Miles _____ >3-4 Miles _____ Total Within 4 Miles ³⁻⁵ _____	Other Sensitive Environments Located Within 4 Miles of the Site: <input type="checkbox"/> Yes <input type="checkbox"/> No	List All Sensitive Environments Within 1/2 Mile of the Site ⁶ : <u>Distance:</u> <u>Sensitive Environment Type/Wetlands Area (acres):</u> Onsite _____ 0-1/4 Mile _____ >1/4-1/2 Mile _____
*Refer to PA Table 10 for calculations on air pathway exposures		

¹⁻¹¹ Refers to question number on PA pathway scoresheets

Potential Hazardous Waste Site Preliminary Assessment Form						Identification	
						State:	CERCLIS #:
						CERCLIS Discovery Date:	
1. General Site Information							
Name: Current Fire Station		Street Address: NA					
City: Cannon AFB		State: NM	Zip Code: 88103	County: Curry	Co. Code: 9	Cong. Dist: 3	
Latitude: 34°23'28.94"	Longitude: 103°19'20.73"	Approximate Area of Site: <u> 1 </u> Acres <u> </u> Square Ft		Status of Site: <input checked="" type="checkbox"/> Active <input type="checkbox"/> Not Specified <input type="checkbox"/> Inactive <input type="checkbox"/> NA (GW plume, etc.)			
Site Description: The current fire station (Building 158) is located in the west central portion of Cannon AFB near a majority of the base's hangars. The current fire station was constructed in 2005 and currently includes the following equipment:							
<ul style="list-style-type: none"> • Foam trailer – 1,000-gallon AFFF capacity, • Crash truck C-3 – 150-gallon AFFF capacity, • Crash truck C-5 – 200-gallon AFFF capacity, • Crash truck C-7 – 500-gallon AFFF capacity, • Crash truck C-8 – 210-gallon AFFF capacity, • Crash truck C-11 – 400-gallon AFFF capacity, • Engine E-4 – Five containers (5-gallon) of AFFF stored on truck, and • Engine E-25 – Five containers (5-gallon) of AFFF stored on truck. 							
Furthermore, a bench stock supply of AFFF is regularly stored on the stall floors and in a supply closet near the stalls. At the time of the assessment, approximately 110 gallons (two 55-gallon barrels) of AFFF were stored on the stall floors in spill-containment drums. The supply closet contained approximately 695 gallons of AFFF (in 5-gallon buckets) stored on a spill-containment pallet. A floor drain runs the length of the station stalls. Wastewater and liquid that enters the drain is transported through a series of mains to the installation's WWTP. There is no OWS installed at the current fire station.							
Daily operational checks, monthly time and distance testing, and hose washouts for all firefighting vehicles at the current fire station are conducted on the concrete ramp north of the fire station using water. A storm drain is present on the concrete ramp that drains to the South Playa Lake. Annual foam checks for vehicles stored at this station are conducted at the active FTA. Refilling activities for AFFF are conducted in station stalls. AFFF is transferred using dedicated pumps in emergency vehicles or mounted on AFFF trailers.							
The Fire Inspector had no knowledge or record of any major spills or releases of AFFF at the current fire station. At the time of the assessment, there was no available documentation or evidence to suggest that a release of AFFF to the environment has ever occurred at this fire station.							
2. Owner/Operator Information							
Owner: Cannon AFB		Operator: Same as "Owner"					
Street Address:		Street Address:					
City: Cannon AFB		City:					
State: NM	Zip Code: 88103	Telephone:	State:	Zip Code:	Telephone:		
Type of Ownership: <input type="checkbox"/> Private <input type="checkbox"/> County <input checked="" type="checkbox"/> Federal Agency <input type="checkbox"/> Municipal <input type="checkbox"/> Name: <u>DOD</u> <input type="checkbox"/> Not Specified <input type="checkbox"/> State <input type="checkbox"/> Other _____ <input type="checkbox"/> Indian			Type of Ownership: <input type="checkbox"/> Private <input type="checkbox"/> County <input type="checkbox"/> Federal Agency <input type="checkbox"/> Municipal <input type="checkbox"/> Name: _____ <input type="checkbox"/> Not Specified <input type="checkbox"/> State <input type="checkbox"/> Other _____ <input type="checkbox"/> Indian				

3. Site Evaluator Information		
Name of Evaluator: Ryan McVickers	Agency/Organization: HydroGeoLogic, Inc.	Date Prepared: 08/01/2015
Street Address: 340 E. Palm Lane, Ste. A240	City: Phoenix	State: Arizona
Name of EPA or State Agency Contact: NA	Street Address:	
City:	State:	Telephone:
4. Site Disposition (for EPA use only)		
Emergency Response/Removal Assessment Recommendation: <input type="checkbox"/> Yes <input type="checkbox"/> No Date: _____	CERCLIS Recommendation: <input type="checkbox"/> Higher Priority SI <input type="checkbox"/> Lower Priority SI <input type="checkbox"/> NFRAP <input type="checkbox"/> RCRA <input type="checkbox"/> Other: _____ Date: _____	Signature: Name (typed): Position:
5. General Site Characteristics - NA		
Predominant Land Use Within 1 Mile of Site (check all that apply): <input type="checkbox"/> Industrial <input type="checkbox"/> Agriculture <input type="checkbox"/> DOI <input type="checkbox"/> Commercial <input type="checkbox"/> Mining <input type="checkbox"/> Other Federal <input type="checkbox"/> Residential <input type="checkbox"/> DOD <input type="checkbox"/> Facility: <input type="checkbox"/> Forest/Fields <input type="checkbox"/> DOE <input type="checkbox"/> Other _____	Site Setting: <input type="checkbox"/> Urban <input type="checkbox"/> Suburban <input checked="" type="checkbox"/> Rural	Years of Operation: Beginning Year _____ Ending Year _____ <input type="checkbox"/> Unknown
Type of Site Operations (check all that apply): <input type="checkbox"/> Manufacturing (must check subcategory) <input type="checkbox"/> Lumber and Wood Products <input type="checkbox"/> Inorganic Chemicals <input type="checkbox"/> Plastic and/or Rubber Products <input type="checkbox"/> Paints, Varnishes <input type="checkbox"/> Industrial Organic Chemicals <input type="checkbox"/> Agricultural Chemicals <input type="checkbox"/> Miscellaneous Chemical Products <input type="checkbox"/> Primary Metals <input type="checkbox"/> Metal Coating, Plating, Engraving <input type="checkbox"/> Metal Forging, Stamping <input type="checkbox"/> Fabricated Structural Metal Products <input type="checkbox"/> Electronic Equipment <input type="checkbox"/> Other Manufacturing <input type="checkbox"/> Mining <input type="checkbox"/> Metals <input type="checkbox"/> Coal <input type="checkbox"/> Oil and Gas <input type="checkbox"/> Non-metallic Minerals	 <input type="checkbox"/> Retail <input type="checkbox"/> Recycling <input type="checkbox"/> Junk/Salvage Yard <input type="checkbox"/> Municipal Landfill <input type="checkbox"/> Other Landfill <input type="checkbox"/> DOD <input type="checkbox"/> DOE <input type="checkbox"/> DOI <input type="checkbox"/> Other Federal Facility _____ <input type="checkbox"/> RCRA <input type="checkbox"/> Treatment, Storage, or Disposal <input type="checkbox"/> Large Quantity Generator <input type="checkbox"/> Small Quantity Generator <input type="checkbox"/> Subtitle D <input type="checkbox"/> Municipal <input type="checkbox"/> Industrial <input type="checkbox"/> "Converter" <input type="checkbox"/> "Protective Filer" <input type="checkbox"/> "Non-or Late Filer" <input type="checkbox"/> Note Specified <input type="checkbox"/> Other _____	Waste Generated: <input type="checkbox"/> Onsite <input type="checkbox"/> Offsite <input type="checkbox"/> Onsite and Offsite Waste Deposition Authorized By: <input type="checkbox"/> Present Owner <input type="checkbox"/> Former Owner <input type="checkbox"/> Present & Former Owner <input type="checkbox"/> Unauthorized <input type="checkbox"/> Unknown Waste Accessible to the Public: <input type="checkbox"/> Yes <input type="checkbox"/> No Distance to Nearest Dwelling, School, or Workplace: _____ Feet

6. Waste Characteristics Information - NA			
(Refer to PA Table 1 for WC Score)			
Source Type: (check all that apply)	Source Waste Quantity: (include unit)	Tier*:	General Type of Waste (check all that apply):
<input type="checkbox"/> Landfill <input type="checkbox"/> Surface Impoundment <input type="checkbox"/> Drums <input type="checkbox"/> Tanks and Non-Dum Containers <input type="checkbox"/> Chemical Waste Pile <input checked="" type="checkbox"/> Scrap Metal or Junk Pile <input type="checkbox"/> Tailings Pile <input type="checkbox"/> Trash Pile (open drum) <input type="checkbox"/> Land Treatment <input type="checkbox"/> Contaminated GW Plume (unidentified source) <input type="checkbox"/> Contaminated SW/Sediment (unidentified source) <input type="checkbox"/> Contaminated Soil <input type="checkbox"/> Other _____ <input type="checkbox"/> No Sources	_____	<input type="checkbox"/> Metals <input type="checkbox"/> Organics <input type="checkbox"/> Inorganics <input type="checkbox"/> Solvents <input type="checkbox"/> Paints/Pigments <input type="checkbox"/> Laboratory/Hospital Waste <input type="checkbox"/> Radioactive Waste <input type="checkbox"/> Construction/Demolition Waste	<input type="checkbox"/> Pesticides/Herbicides <input type="checkbox"/> Acids/Bases <input type="checkbox"/> Oily Waste <input type="checkbox"/> Municipal Waste <input type="checkbox"/> Mining Waste <input type="checkbox"/> Explosives <input type="checkbox"/> Other _____
Physical State of Waste as Deposited (check all that apply):			
<input type="checkbox"/> Solid <input type="checkbox"/> Sludge <input type="checkbox"/> Powder <input type="checkbox"/> Liquid <input type="checkbox"/> Gas			
<small>*C=Constituent, W=Wastestream, V=Volume, A=Area</small>			

7. Ground Water Pathway - NA			
Is Ground Water Used for Drinking Within 4 Miles: <input type="checkbox"/> Yes <input type="checkbox"/> No	Is There a Suspected Release to Ground Water ¹ : <input type="checkbox"/> Yes <input type="checkbox"/> No	List Secondary Target Population Served by Ground Water Withdrawn From:	
		0 - 1/4 Mile	_____
		>1/4 - 1/2 Mile	_____
		>1/2 - 1 Mile	_____
		>1 - 2 Mile	_____
		>2 - 3 Mile	_____
		>3 - 4 Mile	_____
		Total Within 4 Miles ⁴	_____
If Yes, Distance to nearest Drinking Well: _____ Feet			
Type of Drinking Water Wells Within 4 Miles <input type="checkbox"/> Municipal <input type="checkbox"/> Private <input type="checkbox"/> None	Have Primary Target Drinking Water Wells Been Identified: <input type="checkbox"/> Yes <input type="checkbox"/> No	If Yes, Enter Primary Target Population: _____ People ³	
Depth to Shallowest Aquifer: _____ Feet	Nearest Designated Wellhead Protection Area ⁶ :	<input type="checkbox"/> Underlies Site <input type="checkbox"/> >0-4 Miles <input type="checkbox"/> None Within 4 Miles	
Karst Terrain/Aquifer Present: <input type="checkbox"/> Yes <input type="checkbox"/> No			
<small>*Use population #s for PA Table 2</small> <small>*Note nearest well for #5 on GW Pathway Scoresheet</small>			

8. Surface Water Pathway - NA	
Type of Surface Water Draining Site and 15 Miles Downstream (check all that apply): <input type="checkbox"/> Stream <input type="checkbox"/> River <input type="checkbox"/> Pond <input type="checkbox"/> Lake <input type="checkbox"/> Bay <input type="checkbox"/> Ocean <input type="checkbox"/> Other _____	Shortest Overland Distance From Any Source to Surface Water: _____ Feet _____ Miles
Is There a Suspected Release to Surface Water ¹ : <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Site is Located in: <input type="checkbox"/> Annual - 10 yr Floodplain <input type="checkbox"/> >10yr - 100yr Floodplain <input type="checkbox"/> >100yr - 500yr Floodplain <input type="checkbox"/> >500yr Floodplain
Drinking Water Intake Located Along the Surface Water Migration Path: <input type="checkbox"/> Yes <input type="checkbox"/> No	List All Secondary Target Drinking Water Intakes: <u>Name:</u> <u>Water Body:</u> <u>Flow (cfs):</u> <u>Population Served:</u> _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ Total within 15 Miles ⁴ _____
Fisheries Located Along the Surface Water Migration Path: <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, Distance to Nearest Fishery: _____ Miles	List All Secondary Target Fisheries ¹⁰ : <u>Water Body/ Fishery Name :</u> <u>Flow (cfs):</u> _____ _____ _____ _____ _____ _____
Have Primary Target Drinking Water Intakes Been Identified: <input type="checkbox"/> Yes <input type="checkbox"/> No	

8. Surface Water Pathway (continued)		
Wetlands Located Along the Surface Water Migration Path:	Other Sensitive Environments Located Along the Surface Water Migration Path:	
<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	If Yes, Distance to Nearest Sensitive Environment: _____ Miles
Have Primary Target Wetlands Been Identified:	Have Primary Target Sensitive Environments Been Identified:	
<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
List All Wetlands:	List All Sensitive Environments¹¹:	
<u>Water Body :</u> _____ <u>Flow (cfs):</u> _____ <u>Frontage miles:</u> _____	<u>Water Body :</u> _____ <u>Flow (cfs):</u> _____ <u>Sensitive Environment Type:</u> _____	
_____	_____	_____
_____	_____	_____
_____	_____	_____
9. Soil Exposure Pathway - NA		
Are People Occupying Residence or Attending School or Daycare on or Within 200 Feet of Area of Known or Suspected Contamination:	Number of Workers Onsite ⁴ :	Have Terrestrial Sensitive Environments Been Identified on or Within 200 Feet of Areas of Known or Suspected Contamination:
<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> None <input type="checkbox"/> 1 - 100 <input type="checkbox"/> 101 - 1,000 <input type="checkbox"/> > 1,000	<input type="checkbox"/> Yes <input type="checkbox"/> No
If Yes, Enter Total Residential Population: _____ People ²	Population Within 1 Mile: _____ People ⁷	If Yes, List Each Terrestrial Sensitive Environment⁵: _____ _____ _____
*Refer to PA Table 7 for environment types		
10. Air Pathway - NA		
Is there a Suspected Release to Air ¹ :	Wetlands Located Within 4 Miles of the Site ⁶ :	
<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	If Yes, How Many Acres: _____ Acres
Enter Total Population on or Within:	Other Sensitive Environments Located Within 4 Miles of the Site:	
Onsite _____	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
0-1/4 Mile _____		
>1/4-1/2 Mile _____	List All Sensitive Environments Within 1/2 Mile of the Site ⁶ :	
>1/2-1 Mile _____	<u>Distance:</u>	<u>Sensitive Environment Type/Wetlands Area (acres):</u>
>1-2 Miles _____	<u>Onsite</u>	_____
>2-3 Miles _____	<u>0-1/4 Mile</u>	_____
>3-4 Miles _____	<u>>1/4-1/2 Mile</u>	_____
Total Within 4 Miles ³⁻⁵ _____	*Refer to PA Table 10 for calculations on air pathway exposures	

¹⁻¹¹ Refers to question number on PA pathway scoresheets

Potential Hazardous Waste Site Preliminary Assessment Form						Identification
						State:
						CERCLIS Discovery Date:
1. General Site Information						
Name: Former Fire Station		Street Address: NA				
City: Cannon AFB		State: NM	Zip Code: 88103	County: Curry	Co. Code: 9	Cong. Dist: 3
Latitude: 34°23'22.65"	Longitude: 103°19'28.72"	Approximate Area of Site: ____ 1 _____ Acres ____ Square Ft		Status of Site: <input type="checkbox"/> Active <input type="checkbox"/> Not Specified <input checked="" type="checkbox"/> Inactive <input type="checkbox"/> NA (GW plume, etc.)		
<p>Site Description: The former fire station (Building 130) is located in the west central portion of Cannon AFB near a majority of the base's hangars. The building served as the base's sole fire station until 2005, when the current fire station was opened. It is currently occupied by the Air Force Explosive Ordnance Disposal group and the station stalls have been converted to a gym. According to the Fire Inspector, operations at the former fire station were similar to those at the current station and the same types of vehicles and equipment were stored at the station.</p> <p>Daily operational checks and monthly time and distance testing for all firefighting vehicles at the former fire station were conducted on the concrete ramp south of the former fire station using water. Annual foam checks for vehicles stored at this station were conducted at the active FTA. Refilling activities for AFFF were conducted in station stalls. AFFF was transferred using dedicated pumps in emergency vehicles or mounted on AFFF trailers. At the time of the inspection, one floor drain was visible in the station stalls. Hose washouts at the former fire station were conducted in a large closet near the station stalls. Hoses were hung there to dry and liquid would have entered a drain on the closet floor.</p> <p>Additionally, a bench stock supply of AFFF was stored in outdoor closets on the east side of the building. The Fire Inspector wasn't aware of an exact quantity of AFFF that was stored there or if any spill containment mechanisms were in place, but he indicated that the supply would have included several 55-gallon drums and/or 5-gallon containers. A storm drain was visible approximately 20 feet from the outdoor closets, and the Fire Inspector indicated that any leaks or spills of AFFF near the outdoor closets could have entered that drain.</p> <p>Wastewater and liquid that entered floor drains inside the former fire station was routed through an OWS located on the east side of the building. The OWS drained to the sanitary sewer system and eventually to the WWTP. The Fire Inspector had no knowledge or record of any spills or releases of AFFF at the former fire station.</p> <p>At the time of the assessment, there was no available documentation or evidence to suggest that a release of AFFF to the environment has ever occurred at this fire station. Any spills or releases of AFFF would have been routed to the WWTP or the South Playa Lake.</p>						
2. Owner/Operator Information						
Owner: Cannon AFB		Operator: Same as "Owner"				
Street Address:		Street Address:				
City: Cannon AFB		City:				
State: NM	Zip Code: 88103	Telephone:	State:	Zip Code:	Telephone:	
Type of Ownership: <input type="checkbox"/> Private <input checked="" type="checkbox"/> Federal Agency <input type="checkbox"/> Name: <u>DOD</u> <input type="checkbox"/> State <input type="checkbox"/> Indian			Type of Ownership: <input type="checkbox"/> Private <input type="checkbox"/> County <input type="checkbox"/> Municipal <input checked="" type="checkbox"/> Not Specified <input type="checkbox"/> Other _____ <input type="checkbox"/> County <input type="checkbox"/> Municipal <input type="checkbox"/> Not Specified <input type="checkbox"/> Other _____			

3. Site Evaluator Information		
Name of Evaluator: Ryan McVickers	Agency/Organization: HydroGeoLogic, Inc.	Date Prepared: 08/01/2015
Street Address: 340 E. Palm Lane, Ste. A240	City: Phoenix	State: Arizona
Name of EPA or State Agency Contact: NA	Street Address:	
City:	State:	Telephone:
4. Site Disposition (for EPA use only)		
Emergency Response/Removal Assessment Recommendation: <input type="checkbox"/> Yes <input type="checkbox"/> No Date: _____	CERCLIS Recommendation: <input type="checkbox"/> Higher Priority SI <input type="checkbox"/> Lower Priority SI <input type="checkbox"/> NFRAP <input type="checkbox"/> RCRA <input type="checkbox"/> Other: _____ Date: _____	Signature: Name (typed): Position:
5. General Site Characteristics - NA		
Predominant Land Use Within 1 Mile of Site (check all that apply): <input type="checkbox"/> Industrial <input type="checkbox"/> Agriculture <input type="checkbox"/> DOI <input type="checkbox"/> Commercial <input type="checkbox"/> Mining <input type="checkbox"/> Other Federal <input type="checkbox"/> Residential <input type="checkbox"/> DOD <input type="checkbox"/> Facility: <input type="checkbox"/> Forest/Fields <input type="checkbox"/> DOE <input type="checkbox"/> Other _____	Site Setting: <input type="checkbox"/> Urban <input type="checkbox"/> Suburban <input checked="" type="checkbox"/> Rural	Years of Operation: Beginning Year _____ Ending Year _____ <input type="checkbox"/> Unknown
Type of Site Operations (check all that apply): <input type="checkbox"/> Manufacturing (must check subcategory) <input type="checkbox"/> Lumber and Wood Products <input type="checkbox"/> Inorganic Chemicals <input type="checkbox"/> Plastic and/or Rubber Products <input type="checkbox"/> Paints, Varnishes <input type="checkbox"/> Industrial Organic Chemicals <input type="checkbox"/> Agricultural Chemicals <input type="checkbox"/> Miscellaneous Chemical Products <input type="checkbox"/> Primary Metals <input type="checkbox"/> Metal Coating, Plating, Engraving <input type="checkbox"/> Metal Forging, Stamping <input type="checkbox"/> Fabricated Structural Metal Products <input type="checkbox"/> Electronic Equipment <input type="checkbox"/> Other Manufacturing <input type="checkbox"/> Mining <input type="checkbox"/> Metals <input type="checkbox"/> Coal <input type="checkbox"/> Oil and Gas <input type="checkbox"/> Non-metallic Minerals	 <input type="checkbox"/> Retail <input type="checkbox"/> Recycling <input type="checkbox"/> Junk/Salvage Yard <input type="checkbox"/> Municipal Landfill <input type="checkbox"/> Other Landfill <input type="checkbox"/> DOD <input type="checkbox"/> DOE <input type="checkbox"/> DOI <input type="checkbox"/> Other Federal Facility _____ <input type="checkbox"/> RCRA <input type="checkbox"/> Treatment, Storage, or Disposal <input type="checkbox"/> Large Quantity Generator <input type="checkbox"/> Small Quantity Generator <input type="checkbox"/> Subtitle D <input type="checkbox"/> Municipal <input type="checkbox"/> Industrial <input type="checkbox"/> "Converter" <input type="checkbox"/> "Protective Filer" <input type="checkbox"/> "Non-or Late Filer" <input type="checkbox"/> Note Specified <input type="checkbox"/> Other _____	Waste Generated: <input type="checkbox"/> Onsite <input type="checkbox"/> Offsite <input type="checkbox"/> Onsite and Offsite Waste Deposition Authorized By: <input type="checkbox"/> Present Owner <input type="checkbox"/> Former Owner <input type="checkbox"/> Present & Former Owner <input type="checkbox"/> Unauthorized <input type="checkbox"/> Unknown Waste Accessible to the Public: <input type="checkbox"/> Yes <input type="checkbox"/> No
		Distance to Nearest Dwelling, School, or Workplace: _____ Feet

6. Waste Characteristics Information - NA			
(Refer to PA Table 1 for WC Score)			
Source Type: (check all that apply)	Source Waste Quantity: (include unit)	Tier*:	General Type of Waste (check all that apply):
<input type="checkbox"/> Landfill <input type="checkbox"/> Surface Impoundment <input type="checkbox"/> Drums <input type="checkbox"/> Tanks and Non-Dum Containers <input type="checkbox"/> Chemical Waste Pile <input type="checkbox"/> Scrap Metal or Junk Pile <input type="checkbox"/> Tailings Pile <input type="checkbox"/> Trash Pile (open drum) <input type="checkbox"/> Land Treatment <input type="checkbox"/> Contaminated GW Plume (unidentified source) <input type="checkbox"/> Contaminated SW/Sediment (unidentified source) <input type="checkbox"/> Contaminated Soil <input type="checkbox"/> Other _____ <input type="checkbox"/> No Sources	_____	<input type="checkbox"/> Metals <input type="checkbox"/> Organics <input type="checkbox"/> Inorganics <input type="checkbox"/> Solvents <input type="checkbox"/> Paints/Pigments <input type="checkbox"/> Laboratory/Hospital Waste <input type="checkbox"/> Radioactive Waste <input type="checkbox"/> Construction/Demolition Waste	<input type="checkbox"/> Pesticides/Herbicides <input type="checkbox"/> Acids/Bases <input type="checkbox"/> Oily Waste <input type="checkbox"/> Municipal Waste <input type="checkbox"/> Mining Waste <input type="checkbox"/> Explosives <input type="checkbox"/> Other _____
Physical State of Waste as Deposited (check all that apply):			
<input type="checkbox"/> Solid <input type="checkbox"/> Sludge <input type="checkbox"/> Powder <input type="checkbox"/> Liquid <input type="checkbox"/> Gas			
<small>*C=Constituent, W=Wastestream, V=Volume, A=Area</small>			

7. Ground Water Pathway - NA			
Is Ground Water Used for Drinking Within 4 Miles: <input type="checkbox"/> Yes <input type="checkbox"/> No	Is There a Suspected Release to Ground Water ¹ : <input type="checkbox"/> Yes <input type="checkbox"/> No	List Secondary Target Population Served by Ground Water Withdrawn From:	
		0 - 1/4 Mile	_____
		>1/4 - 1/2 Mile	_____
		>1/2 - 1 Mile	_____
		>1 - 2 Mile	_____
		>2 - 3 Mile	_____
		>3 - 4 Mile	_____
		Total Within 4 Miles ⁴	_____
If Yes, Distance to nearest Drinking Well: _____ Feet			
Type of Drinking Water Wells Within 4 Miles <input type="checkbox"/> Municipal <input type="checkbox"/> Private <input type="checkbox"/> None	Have Primary Target Drinking Water Wells Been Identified: <input type="checkbox"/> Yes <input type="checkbox"/> No	If Yes, Enter Primary Target Population: _____ People ³	
Depth to Shallowest Aquifer: _____ Feet	Nearest Designated Wellhead Protection Area ⁶ :	<input type="checkbox"/> Underlies Site <input type="checkbox"/> >0-4 Miles <input type="checkbox"/> None Within 4 Miles	
Karst Terrain/Aquifer Present: <input type="checkbox"/> Yes <input type="checkbox"/> No			
<small>*Use population #s for PA Table 2</small> <small>*Note nearest well for #5 on GW Pathway Scoresheet</small>			

9. Soil Exposure Pathway - NA		
Are People Occupying Residence or Attending School or Daycare on or Within 200 Feet of Area of Known or Suspected Contamination: <input type="checkbox"/> Yes <input type="checkbox"/> No	Number of Workers Onsite ⁴ : <input type="checkbox"/> None <input type="checkbox"/> 1 - 100 <input type="checkbox"/> 101 - 1,000 <input type="checkbox"/> > 1,000	Have Terrestrial Sensitive Environments Been Identified on or Within 200 Feet of Areas of Known or Suspected Contamination: <input type="checkbox"/> Yes <input type="checkbox"/> No
	If Yes, Enter Total Residential Population: <hr style="width: 100px; margin-left: 0;"/> _____ People ²	Population Within 1 Mile: <hr style="width: 100px; margin-left: 0;"/> _____ People ⁷
*Refer to PA Table 7 for environment types		
10. Air Pathway - NA		
Is there a Suspected Release to Air ¹ : <input type="checkbox"/> Yes <input type="checkbox"/> No	Wetlands Located Within 4 Miles of the Site ⁶ : <input type="checkbox"/> Yes <input type="checkbox"/> No	If Yes, How Many Acres: _____ Acres
Enter Total Population on or Within: Onsite _____ 0-1/4 Mile _____ >1/4-1/2 Mile _____ >1/2-1 Mile _____ >1-2 Miles _____ >2-3 Miles _____ >3-4 Miles _____ Total Within 4 Miles ³⁻⁵ _____	Other Sensitive Environments Located Within 4 Miles of the Site: <input type="checkbox"/> Yes <input type="checkbox"/> No	List All Sensitive Environments Within 1/2 Mile of the Site ⁶ : <u>Distance:</u> <u>Sensitive Environment Type/Wetlands Area (acres):</u> Onsite _____ 0-1/4 Mile _____ >1/4-1/2 Mile _____
*Refer to PA Table 10 for calculations on air pathway exposures		

¹⁻¹¹ Refers to question number on PA pathway scoresheets

Potential Hazardous Waste Site Preliminary Assessment Form			Identification	
			State:	CERCLIS #:
			CERCLIS Discovery Date:	
1. General Site Information				
Name: Former Sewage Lagoons		Street Address: NA		
City: Cannon AFB		State: NM	Zip Code: 88103	County: Curry Co. Code: 9 Cong. Dist: 3
Latitude: 34°23'14.95"	Longitude: 103°18'18.62"	Approximate Area of Site: <u>32</u> Acres <u> </u> Square Ft	Status of Site: <input type="checkbox"/> Active <input type="checkbox"/> Not Specified <input checked="" type="checkbox"/> Inactive <input type="checkbox"/> NA (GW plume, etc.)	
<p>Site Description: The former sewage lagoons consisted of two unlined surface impoundments that were used from 1966 to 1998 and received sanitary and industrial waste from base facilities prior to the construction of the WWTP. The sewage lagoons were located on the east central portion of Cannon AFB, directly east of the abandoned runway and south of the current WWTP.</p> <p>The sewage lagoons had a total surface area of 32 acres and were separated by a 12-foot-wide levee. Sewage discharge to the lagoons ceased in 1998 when the WWTP began operations. However, the base continued to discharge treated wastewater to the lagoons for a short period of time in order to prevent direct exposure to the underlying sludge. In early 1998, the base stopped discharging treated wastewater to the lagoons and allowed them to dry.</p> <p>The former sewage lagoon area is designated as Solid Waste Management Unit (SWMU) 101 and has been the site of several investigations and remedial actions regarding volatile organic compounds, metals, pesticides, nitrate, and sulfate. In July 2008, a status of No Further Action was recommended for the area by the U.S. Army Corps of Engineers.</p> <p>The former sewage lagoons would have received any AFFF that entered the sanitary sewer system from 1966 to 1998. There are documented releases of AFFF to the sanitary sewer system from Hangars 199 and 208 prior to and during 1998. As such, there is evidence that AFFF was released to the environment at the former sewage lagoons.</p>				
2. Owner/Operator Information				
Owner: Cannon AFB		Operator: Same as "Owner"		
Street Address:		Street Address:		
City: Cannon AFB		City:		
State: NM	Zip Code: 88103	Telephone:	State:	Zip Code:
Type of Ownership: <input type="checkbox"/> Private <input checked="" type="checkbox"/> Federal Agency Name: <u>DOD</u> <input type="checkbox"/> State <input type="checkbox"/> Indian		Type of Ownership: <input type="checkbox"/> Private <input type="checkbox"/> Federal Agency Name: _____ <input type="checkbox"/> Municipal <input type="checkbox"/> Not Specified <input type="checkbox"/> Other _____		
3. Site Evaluator Information				
Name of Evaluator: Ryan McVickers	Agency/Organization: HydroGeoLogic, Inc.		Date Prepared: 07/01/2015	
Street Address: 340 E. Palm Lane, Ste. A240		City: Phoenix		State: Arizona
Name of EPA or State Agency Contact: NA		Street Address:		
City:	State:		Telephone:	

4. Site Disposition (for EPA use only)			
Emergency Response/Removal Assessment Recommendation: <input type="checkbox"/> Yes <input type="checkbox"/> No Date: _____		CERCLIS Recommendation: <input type="checkbox"/> Higher Priority SI <input type="checkbox"/> Lower Priority SI <input type="checkbox"/> NFRAP <input type="checkbox"/> RCRA <input type="checkbox"/> Other: _____ Date: _____	Signature: Name (typed): Position:
5. General Site Characteristics			
Predominant Land Use Within 1 Mile of Site (check all that apply): <input type="checkbox"/> Industrial <input type="checkbox"/> Agriculture <input type="checkbox"/> DOI <input type="checkbox"/> Commercial <input type="checkbox"/> Mining <input type="checkbox"/> Other Federal <input type="checkbox"/> Residential <input checked="" type="checkbox"/> DOD <input type="checkbox"/> Facility: <input type="checkbox"/> Forest/Fields <input type="checkbox"/> DOE <input type="checkbox"/> _____ <input type="checkbox"/> Other _____		Site Setting: <input type="checkbox"/> Urban <input type="checkbox"/> Suburban <input checked="" type="checkbox"/> Rural	Years of Operation: Beginning Year <u>1966</u> Ending Year <u>1998</u> <input type="checkbox"/> Unknown
Type of Site Operations (check all that apply): <input type="checkbox"/> Manufacturing (must check subcategory) <input type="checkbox"/> Lumber and Wood Products <input type="checkbox"/> Inorganic Chemicals <input type="checkbox"/> Plastic and/or Rubber Products <input type="checkbox"/> Paints, Varnishes <input type="checkbox"/> Industrial Organic Chemicals <input type="checkbox"/> Agricultural Chemicals <input type="checkbox"/> Miscellaneous Chemical Products <input type="checkbox"/> Primary Metals <input type="checkbox"/> Metal Coating, Plating, Engraving <input type="checkbox"/> Metal Forging, Stamping <input type="checkbox"/> Fabricated Structural Metal Products <input checked="" type="checkbox"/> Electronic Equipment <input type="checkbox"/> Other Manufacturing <input type="checkbox"/> Mining <input type="checkbox"/> Metals <input type="checkbox"/> Coal <input type="checkbox"/> Oil and Gas <input type="checkbox"/> Non-metallic Minerals		Waste Generated: <input type="checkbox"/> Retail <input type="checkbox"/> Recycling <input type="checkbox"/> Junk/Salvage Yard <input type="checkbox"/> Municipal Landfill <input type="checkbox"/> Other Landfill <input checked="" type="checkbox"/> DOD <input type="checkbox"/> DOE <input type="checkbox"/> DOI <input type="checkbox"/> Other Federal Facility _____ <input type="checkbox"/> RCRA <input type="checkbox"/> Treatment, Storage, or Disposal <input type="checkbox"/> Large Quantity Generator <input type="checkbox"/> Small Quantity Generator <input type="checkbox"/> Subtitle D <input type="checkbox"/> Municipal <input type="checkbox"/> Industrial <input type="checkbox"/> "Converter" <input type="checkbox"/> "Protective Filer" <input type="checkbox"/> "Non-or Late Filer" <input type="checkbox"/> Note Specified <input type="checkbox"/> Other _____	Waste Deposition Authorized By: <input checked="" type="checkbox"/> Present Owner <input type="checkbox"/> Former Owner <input type="checkbox"/> Present & Former Owner <input type="checkbox"/> Unauthorized <input type="checkbox"/> Unknown
		Waste Accessible to the Public: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Distance to Nearest Dwelling, School, or Workplace: <u>1.5 Miles</u>
6. Waste Characteristics Information (Refer to PA Table 1 for WC Score)			
Source Type: (check all that apply)	Source Waste Quantity: (include unit)	Tier*: _____	General Type of Waste (check all that apply): <input type="checkbox"/> Landfill _____ <input type="checkbox"/> Surface Impoundment _____ <input type="checkbox"/> Drums _____ <input type="checkbox"/> Tanks and Non-Drum Containers _____ <input type="checkbox"/> Chemical Waste Pile _____ <input type="checkbox"/> Scrap Metal or Junk Pile _____ <input type="checkbox"/> Tailings Pile _____ <input type="checkbox"/> Trash Pile (open drum) _____ <input type="checkbox"/> Land Treatment _____ <input type="checkbox"/> Contaminated GW Plume (unidentified source) _____ <input type="checkbox"/> Contaminated SW/Sediment (unidentified source) _____ <input type="checkbox"/> Contaminated Soil _____ <input checked="" type="checkbox"/> Other Wastewater _____ <input type="checkbox"/> No Sources _____
General Type of Waste (check all that apply): <input type="checkbox"/> Metals <input type="checkbox"/> Organics <input type="checkbox"/> Inorganics <input type="checkbox"/> Solvents <input type="checkbox"/> Paints/Pigments <input type="checkbox"/> Laboratory/Hospital Waste <input type="checkbox"/> Radioactive Waste <input type="checkbox"/> Construction/Demolition Waste			
Physical State of Waste as Deposited (check all that apply): <input type="checkbox"/> Solid <input type="checkbox"/> Sludge <input type="checkbox"/> Powder <input checked="" type="checkbox"/> Liquid <input type="checkbox"/> Gas			

*C=Constituent, W=Wastestream, V=Volume, A=Area

8. Surface Water Pathway (continued)		
Wetlands Located Along the Surface Water Migration Path:	Other Sensitive Environments Located Along the Surface Water Migration Path: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, Distance to Nearest Sensitive Environment: _____ Miles	
Have Primary Target Wetlands Been Identified: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Have Primary Target Sensitive Environments Been Identified: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
List All Wetlands: <u>Water Body</u> : <u>Flow (cfs)</u> : <u>Frontage miles</u> : <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>	List All Sensitive Environments ¹¹ : <u>Water Body</u> : <u>Flow (cfs)</u> : <u>Sensitive Environment Type</u> : <hr/> <hr/> <hr/>	
9. Soil Exposure Pathway		
Are People Occupying Residence or Attending School or Daycare on or Within 200 Feet of Area of Known or Suspected Contamination: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Number of Workers Onsite ⁴ : <input type="checkbox"/> None <input checked="" type="checkbox"/> 1 - 100 <input type="checkbox"/> 101 - 1,000 <input type="checkbox"/> > 1,000	Have Terrestrial Sensitive Environments Been Identified on or Within 200 Feet of Areas of Known or Suspected Contamination: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If Yes, Enter Total Residential Population: <hr/> People ²	Population Within 1 Mile: <hr/> People ⁷	If Yes, List Each Terrestrial Sensitive Environment ⁵ : <hr/> <hr/> <hr/>
<small>*Refer to PA Table 7 for environment types</small>		
10. Air Pathway		
Is there a Suspected Release to Air ¹ : <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Wetlands Located Within 4 Miles of the Site ⁶ : <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, How Many Acres: _____ Acres	
Enter Total Population on or Within: Onsite _____ 0-1/4 Mile _____ >1/4-1/2 Mile _____ >1/2-1 Mile _____ >1-2 Miles _____ >2-3 Miles _____ >3-4 Miles _____ Total Within 4 Miles ³⁻⁵ _____	Other Sensitive Environments Located Within 4 Miles of the Site: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
List All Sensitive Environments Within 1/2 Mile of the Site ⁶ : <u>Distance</u> : <u>Sensitive Environment Type/Wetlands Area (acres)</u> : Onsite _____ 0-1/4 Mile _____ >1/4-1/2 Mile _____		
<small>*Refer to PA Table 10 for calculations on air pathway exposures</small>		

¹⁻¹¹ Refers to question number on PA pathway scoresheets

Potential Hazardous Waste Site Preliminary Assessment Form						Identification	
						State:	CERCLIS #:
						CERCLIS Discovery Date:	
1. General Site Information							
Name: North Playa Lake Outfall		Street Address: NA					
City: Cannon AFB		State: NM	Zip Code: 88103	County: Curry	Co. Code: 9	Cong. Dist: 3	
Latitude: 34°23'11.51"	Longitude: 103°17'54.21"	Approximate Area of Site: <u> 23 </u> Acres <u> </u> Square Ft		Status of Site: <input checked="" type="checkbox"/> Active <input type="checkbox"/> Not Specified <input type="checkbox"/> Inactive <input type="checkbox"/> NA (GW plume, etc.)			
<p>Site Description: North Playa Lake, located southeast of the WWTP, received all of Cannon AFB sanitary and industrial wastewater from 1943 to 1966. From 1966 to 1998, wastewater on Cannon AFB was discharged directly to the former sewage lagoons located directly south of the WWTP. Currently, the sanitary sewer system connects to the WWTP. Raw wastewater that enters the WWTP collects in one of two lined storage basins: the main storage basin or a 9 million-gallon basin used for unsuitable material that may enter the treatment system (including AFF). Wastewater automatically collects in the main storage basin unless WWTP staff are informed of a release of an unsuitable material to the sanitary sewer system. In such an event, WWTP staff would cease the collection of wastewater into the main basin and divert it to the alternate "unsuitable material" basin. Wastewater in the main storage basin is continually sent to the plant's sequencing batch reactors (SBR) for processing. Wastewater in the 9 million-gallon basin is gradually sent to the SBRs after WWTP personnel are properly prepared to handle whatever "unsuitable material" that may have been sent there.</p> <p>Currently, all treated effluent from the WWTP is released primarily to North Playa Lake with a portion also released to the golf course for irrigation. North Playa Lake is currently designated SWMU 103 and has been the site of Phase I, Phase II, and Phase III RCRA Facility Investigations as well as human health and ecological risk evaluations. The surface water from North Playa Lake is not currently used for any irrigation purposes.</p> <p>There is no accepted wastewater treatment process for PFCs. Any wastewater collected at the WWTP containing PFCs would be passed on to North Playa Lake. As such, a release to the environment has occurred at North Playa Lake.</p>							
2. Owner/Operator Information							
Owner: Cannon AFB			Operator: Same as "Owner"				
Street Address:			Street Address:				
City: Cannon AFB			City:				
State: NM	Zip Code: 88103	Telephone:	State:	Zip Code:	Telephone:		
Type of Ownership: <input type="checkbox"/> Private <input checked="" type="checkbox"/> Federal Agency Name: <u>DOD</u> <input type="checkbox"/> State <input type="checkbox"/> Indian			Type of Ownership: <input type="checkbox"/> Private <input type="checkbox"/> County <input type="checkbox"/> Municipal <input type="checkbox"/> Not Specified <input type="checkbox"/> Other _____ <input type="checkbox"/> County <input type="checkbox"/> Municipal <input type="checkbox"/> Not Specified <input type="checkbox"/> State <input type="checkbox"/> Indian _____				
3. Site Evaluator Information							
Name of Evaluator: Ryan McVickers		Agency/Organization: HydroGeoLogic, Inc.			Date Prepared: 08/01/2015		
Street Address: 340 E. Palm Lane, Ste. A240			City: Phoenix		State: Arizona		
Name of EPA or State Agency Contact: NA			Street Address:				
City:		State:		Telephone:			

4. Site Disposition (for EPA use only)			
Emergency Response/Removal Assessment Recommendation: <input type="checkbox"/> Yes <input type="checkbox"/> No Date: _____		CERCLIS Recommendation: <input type="checkbox"/> Higher Priority SI <input type="checkbox"/> Lower Priority SI <input type="checkbox"/> NFRAP <input type="checkbox"/> RCRA <input type="checkbox"/> Other: _____ Date: _____	Signature: Name (typed): Position:
5. General Site Characteristics			
Predominant Land Use Within 1 Mile of Site (check all that apply): <input type="checkbox"/> Industrial <input type="checkbox"/> Agriculture <input type="checkbox"/> DOI <input type="checkbox"/> Commercial <input type="checkbox"/> Mining <input type="checkbox"/> Other Federal <input type="checkbox"/> Residential <input checked="" type="checkbox"/> DOD <input type="checkbox"/> Facility: _____ <input type="checkbox"/> Forest/Fields <input type="checkbox"/> DOE <input type="checkbox"/> Other _____		Site Setting: <input type="checkbox"/> Urban <input type="checkbox"/> Suburban <input checked="" type="checkbox"/> Rural	Years of Operation: Beginning Year <u>1943</u> Ending Year <u>present</u> <input type="checkbox"/> Unknown
Type of Site Operations (check all that apply): <input type="checkbox"/> Manufacturing (must check subcategory) <input type="checkbox"/> Lumber and Wood Products <input type="checkbox"/> Inorganic Chemicals <input type="checkbox"/> Plastic and/or Rubber Products <input type="checkbox"/> Paints, Varnishes <input type="checkbox"/> Industrial Organic Chemicals <input type="checkbox"/> Agricultural Chemicals <input type="checkbox"/> Miscellaneous Chemical Products <input type="checkbox"/> Primary Metals <input type="checkbox"/> Metal Coating, Plating, Engraving <input type="checkbox"/> Metal Forging, Stamping <input type="checkbox"/> Fabricated Structural Metal Products <input checked="" type="checkbox"/> Electronic Equipment <input type="checkbox"/> Other Manufacturing <input type="checkbox"/> Mining <input type="checkbox"/> Metals <input type="checkbox"/> Coal <input type="checkbox"/> Oil and Gas <input type="checkbox"/> Non-metallic Minerals		Waste Generated: <input type="checkbox"/> Retail <input type="checkbox"/> Recycling <input type="checkbox"/> Junk/Salvage Yard <input type="checkbox"/> Municipal Landfill <input checked="" type="checkbox"/> Other Landfill <input checked="" type="checkbox"/> DOD <input type="checkbox"/> DOE <input type="checkbox"/> DOI <input type="checkbox"/> Other Federal Facility _____ <input type="checkbox"/> RCRA <input type="checkbox"/> Treatment, Storage, or Disposal <input type="checkbox"/> Large Quantity Generator <input type="checkbox"/> Small Quantity Generator <input type="checkbox"/> Subtitle D <input type="checkbox"/> Municipal <input type="checkbox"/> Industrial <input type="checkbox"/> "Converter" <input type="checkbox"/> "Protective Filer" <input type="checkbox"/> "Non-or Late Filer" <input type="checkbox"/> Note Specified <input type="checkbox"/> Other _____	Waste Deposition Authorized By: <input checked="" type="checkbox"/> Present Owner <input type="checkbox"/> Former Owner <input type="checkbox"/> Present & Former Owner <input type="checkbox"/> Unauthorized <input type="checkbox"/> Unknown
		Waste Accessible to the Public: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Distance to Nearest Dwelling, School, or Workplace: 1.75 Miles
6. Waste Characteristics Information (Refer to PA Table 1 for WC Score)			
Source Type: (check all that apply)	Source Waste Quantity: (include unit)	Tier*: _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____	General Type of Waste (check all that apply): <ul style="list-style-type: none"> <input type="checkbox"/> Metals <input type="checkbox"/> Organics <input type="checkbox"/> Inorganics <input type="checkbox"/> Solvents <input type="checkbox"/> Paints/Pigments <input type="checkbox"/> Laboratory/Hospital Waste <input type="checkbox"/> Radioactive Waste <input type="checkbox"/> Construction/Demolition Waste <input type="checkbox"/> Pesticides/Herbicides <input type="checkbox"/> Acids/Bases <input type="checkbox"/> Oily Waste <input type="checkbox"/> Municipal Waste <input type="checkbox"/> Mining Waste <input type="checkbox"/> Explosives <input checked="" type="checkbox"/> Other <u>AFF</u>
		Physical State of Waste as Deposited (check all that apply):	<input type="checkbox"/> Solid <input type="checkbox"/> Sludge <input type="checkbox"/> Powder <input checked="" type="checkbox"/> Liquid <input type="checkbox"/> Gas

*C=Constituent, W=Wastestream, V=Volume, A=Area

7. Ground Water Pathway		
Is Ground Water Used for Drinking Within 4 Miles: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is There a Suspected Release to Ground Water ¹ : <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	List Secondary Target Population Served by Ground Water Withdrawn From: 0 - 1/4 Mile _____ >1/4 - 1/2 Mile _____ >1/2 - 1 Mile _____ >1 - 2 Mile _____ >2 - 3 Mile _____ >3 - 4 Mile _____ Total Within 4 Miles⁴ <u>6,540</u>
If Yes, Distance to nearest Drinking Well: <u>0.5 miles</u> Feet	Have Primary Target Drinking Water Wells Been Identified: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Type of Drinking Water Wells Within 4 Miles (check all that apply): <input checked="" type="checkbox"/> Municipal <input type="checkbox"/> Private <input type="checkbox"/> None	If Yes, Enter Primary Target Population: <u>6,540</u> People ³	
Depth to Shallowest Aquifer: _____ Feet	Nearest Designated Wellhead Protection Area ⁶ : <input type="checkbox"/> Underlies Site <input type="checkbox"/> >0-4 Miles <input checked="" type="checkbox"/> None Within 4 Miles	
Karst Terrain/Aquifer Present: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		*Use population #s for PA Table 2 *Note nearest well for #5 on GW Pathway Scoresheet
8. Surface Water Pathway		
Type of Surface Water Draining Site and 15 Miles Downstream (check all that apply): <input type="checkbox"/> Stream <input type="checkbox"/> River <input type="checkbox"/> Pond <input type="checkbox"/> Lake <input type="checkbox"/> Bay <input type="checkbox"/> Ocean <input type="checkbox"/> Other _____	Shortest Overland Distance From Any Source to Surface Water: _____ Feet _____ Miles	
Is There a Suspected Release to Surface Water ¹ : <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Site is Located in: <input type="checkbox"/> Annual - 10 yr Floodplain <input type="checkbox"/> >10yr - 100yr Floodplain <input type="checkbox"/> >100yr - 500yr Floodplain <input type="checkbox"/> >500yr Floodplain	
Drinking Water Intake Located Along the Surface Water Migration Path: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	List All Secondary Target Drinking Water Intakes: <u>Name:</u> <u>Water Body:</u> <u>Flow (cfs):</u> <u>Population Served:</u> _____ _____ _____ _____ _____ _____ Total within 15 Miles ⁴ <u>NA</u>	
Have Primary Target Drinking Water Intakes Been Identified: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, Distance to Nearest Drinking Water Intake : _____ Miles ⁶		
If Yes, Enter Population Served by Target Intake: <u>NA</u> People ⁴		
Fisheries Located Along the Surface Water Migration Path: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, Distance to Nearest Fishery: _____ Miles	List All Secondary Target Fisheries ¹⁰ : <u>Water Body/ Fishery Name :</u> <u>Flow (cfs):</u> _____ _____ _____ _____	
Have Primary Target Fisheries Been Identified: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		

8. Surface Water Pathway (continued)		
Wetlands Located Along the Surface Water Migration Path:	Other Sensitive Environments Located Along the Surface Water Migration Path: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, Distance to Nearest Sensitive Environment: _____ Miles	
Have Primary Target Wetlands Been Identified: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Have Primary Target Sensitive Environments Been Identified: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
List All Wetlands: <u>Water Body :</u> <u>Flow (cfs):</u> <u>Frontage miles:</u> <hr/> <hr/> <hr/>	List All Sensitive Environments ¹¹ : <u>Water Body :</u> <u>Flow (cfs):</u> <u>Sensitive Environment Type:</u> <hr/> <hr/> <hr/>	
9. Soil Exposure Pathway		
Are People Occupying Residence or Attending School or Daycare on or Within 200 Feet of Area of Known or Suspected Contamination: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Number of Workers Onsite ⁴ : <input type="checkbox"/> None <input checked="" type="checkbox"/> 1 - 100 <input type="checkbox"/> 101 - 1,000 <input type="checkbox"/> > 1,000	Have Terrestrial Sensitive Environments Been Identified on or Within 200 Feet of Areas of Known or Suspected Contamination: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If Yes, Enter Total Residential Population: <hr/> People ²	Population Within 1 Mile: <hr/> People ⁷	If Yes, List Each Terrestrial Sensitive Environment ⁵ : <hr/> <hr/> <hr/>
<small>*Refer to PA Table 7 for environment types</small>		
10. Air Pathway		
Is there a Suspected Release to Air ¹ : <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Wetlands Located Within 4 Miles of the Site ⁶ : <input type="checkbox"/> Yes If Yes, How Many Acres: _____ Acres <input checked="" type="checkbox"/> No	
Enter Total Population on or Within: Onsite _____ 0-1/4 Mile _____ >1/4-1/2 Mile _____ >1/2-1 Mile _____ >1-2 Miles _____ >2-3 Miles _____ >3-4 Miles _____ Total Within 4 Miles ³⁻⁵ _____	Other Sensitive Environments Located Within 4 Miles of the Site: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
List All Sensitive Environments Within 1/2 Mile of the Site ⁶ : Distance: <u>Sensitive Environment Type/Wetlands Area (acres):</u> Onsite _____ 0-1/4 Mile _____ >1/4-1/2 Mile _____		
<small>*Refer to PA Table 10 for calculations on air pathway exposures</small>		

¹⁻¹¹ Refers to question number on PA pathway scoresheets

Potential Hazardous Waste Site Preliminary Assessment Form			Identification	
			State:	CERCLIS #:
			CERCLIS Discovery Date:	
1. General Site Information				
Name: South Playa Lake Outfall		Street Address: NA		
City: Cannon AFB		State: NM	Zip Code: 88103	County: Curry Co. Code: 9 Cong. Dist: 3
Latitude: 34°22'31.31"	Longitude: 103°19'38.03"	Approximate Area of Site: ____ 9 ____ Acres ____ Square Ft	Status of Site: <input checked="" type="checkbox"/> Active <input type="checkbox"/> Not Specified <input type="checkbox"/> Inactive <input type="checkbox"/> NA (GW plume, etc.)	
Site Description: South Playa Lake is located in the southwestern portion of Cannon AFB and serves as the base's primary stormwater collection point.				
<p>South Playa Lake is a naturally occurring 9-acre playa, approximately 15 feet at its deepest point. The lake has received stormwater runoff from portions of the flightline area since 1943. Solvents, fuels, oils, greases, and AFFF are all potential contaminants that would have discharged to the lake from the flightline area. The lake has no outlet. Surface waters flow to the center of the basin and either evaporate or percolate into the soil. The eastern third of the lake has been filled with broken concrete from apron and runway demolitions.</p> <p>South Playa Lake is designated as SD-12 under the ERP and has been the subject of several investigations and sampling events including a records search and Phase II investigation. Several releases of AFFF from hangars entered nearby storm drains and were routed to South Playa Lake. As such, a release to the environment has occurred at South Playa Lake.</p>				
2. Owner/Operator Information				
Owner: Cannon AFB		Operator: Same as "Owner"		
Street Address:		Street Address:		
City: Cannon AFB		City:		
State: NM	Zip Code: 88103	Telephone:	State:	Zip Code:
Type of Ownership: <input type="checkbox"/> Private <input checked="" type="checkbox"/> Federal Agency Name: <u>DOD</u> <input type="checkbox"/> State <input type="checkbox"/> Indian		Type of Ownership: <input type="checkbox"/> Private <input type="checkbox"/> Federal Agency Name: _____ <input type="checkbox"/> County <input type="checkbox"/> Municipal <input type="checkbox"/> Not Specified <input type="checkbox"/> Other _____		
3. Site Evaluator Information				
Name of Evaluator: Ryan McVickers		Agency/Organization: HydroGeoLogic, Inc.		Date Prepared: 07/01/2015
Street Address: 340 E. Palm Lane, Ste. A240		City: Phoenix		State: Arizona
Name of EPA or State Agency Contact: NA		Street Address:		
City:		State:		Telephone:

*C=Constituent, W=Wastestream, V=Volume, A=Area

7. Ground Water Pathway		
Is Ground Water Used for Drinking Within 4 Miles: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is There a Suspected Release to Ground Water ¹ : <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	List Secondary Target Population Served by Ground Water Withdrawn From: 0 - 1/4 Mile _____ >1/4 - 1/2 Mile _____ >1/2 - 1 Mile _____ >1 - 2 Mile _____ >2 - 3 Mile _____ >3 - 4 Mile _____ Total Within 4 Miles⁴ <u>6,540</u>
If Yes, Distance to nearest Drinking Well: <u>1.5 miles</u> Feet	Have Primary Target Drinking Water Wells Been Identified: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If Yes, Enter Primary Target Population: <u>6,540</u> People ³
Type of Drinking Water Wells Within 4 Miles <input checked="" type="checkbox"/> Municipal <input type="checkbox"/> Private <input type="checkbox"/> None		
Depth to Shallowest Aquifer: _____ Feet	Nearest Designated Wellhead Protection Area ⁶ : <input type="checkbox"/> Underlies Site <input type="checkbox"/> >0-4 Miles <input checked="" type="checkbox"/> None Within 4 Miles	
Karst Terrain/Aquifer Present: <input type="checkbox"/> Yes <input type="checkbox"/> No		*Use population #s for PA Table 2 *Note nearest well for #5 on GW Pathway Scoresheet
8. Surface Water Pathway		
Type of Surface Water Draining Site and 15 Miles Downstream (check all that apply): <input type="checkbox"/> Stream <input type="checkbox"/> River <input type="checkbox"/> Pond <input type="checkbox"/> Lake <input type="checkbox"/> Bay <input type="checkbox"/> Ocean <input type="checkbox"/> Other _____	Shortest Overland Distance From Any Source to Surface Water: _____ Feet _____ Miles	
Is There a Suspected Release to Surface Water ¹ : <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Site is Located in: <input type="checkbox"/> Annual - 10 yr Floodplain <input type="checkbox"/> >10yr - 100yr Floodplain <input type="checkbox"/> >100yr - 500yr Floodplain <input type="checkbox"/> >500yr Floodplain	
Drinking Water Intake Located Along the Surface Water Migration Path: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	List All Secondary Target Drinking Water Intakes: <u>Name: Water Body: Flow (cfs): Population Served:</u> _____ _____ _____ _____ _____ Total within 15 Miles⁴ <u>NA</u>	
Have Primary Target Drinking Water Intakes Been Identified: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, Distance to Nearest Drinking Water Intake : _____ Miles ⁶		
If Yes, Enter Population Served by Target Intake: <u>NA</u> People ⁴		
Fisheries Located Along the Surface Water Migration Path: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, Distance to Nearest Fishery: _____ Miles	List All Secondary Target Fisheries ¹⁰ : <u>Water Body/ Fishery Name : Flow (cfs):</u> _____ _____ _____	
Have Primary Target Fisheries Been Identified: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		

8. Surface Water Pathway (continued)

Wetlands Located Along the Surface Water Migration Path:	Other Sensitive Environments Located Along the Surface Water Migration Path: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Have Primary Target Wetlands Been Identified: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No List All Wetlands: <u>Water Body :</u> _____ <u>Flow (cfs):</u> _____ <u>Frontage miles:</u> _____ <hr/> <hr/> <hr/>	If Yes, Distance to Nearest Sensitive Environment: _____ Miles
Have Primary Target Sensitive Environments Been Identified: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No List All Sensitive Environments¹¹: <u>Water Body :</u> _____ <u>Flow (cfs):</u> _____ <u>Sensitive Environment Type:</u> _____ <hr/> <hr/> <hr/>		

9. Soil Exposure Pathway

Are People Occupying Residence or Attending School or Daycare on or Within 200 Feet of Area of Known or Suspected Contamination: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, Enter Total Residential Population: _____ People ²	Number of Workers Onsite ⁴ : <input type="checkbox"/> None <input checked="" type="checkbox"/> 1 - 100 <input type="checkbox"/> 101 - 1,000 <input type="checkbox"/> > 1,000 Population Within 1 Mile: _____ People ⁷	Have Terrestrial Sensitive Environments Been Identified on or Within 200 Feet of Areas of Known or Suspected Contamination: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, List Each Terrestrial Sensitive Environment⁵: <hr/> <hr/> <hr/>
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*Refer to PA Table 7 for environment types

10. Air Pathway

Is there a Suspected Release to Air ¹ : <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Enter Total Population on or Within: Onsite _____ 0-1/4 Mile _____ >1/4-1/2 Mile _____ >1/2-1 Mile _____ >1-2 Miles _____ >2-3 Miles _____ >3-4 Miles _____ Total Within 4 Miles ³⁻⁵ _____	Wetlands Located Within 4 Miles of the Site ⁶ : <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, How Many Acres: _____ Acres
	Other Sensitive Environments Located Within 4 Miles of the Site: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
	List All Sensitive Environments Within 1/2 Mile of the Site ⁶ : <u>Distance:</u> _____ <u>Sensitive Environment Type/Wetlands Area (acres):</u> _____ Onsite _____ 0-1/4 Mile _____ >1/4-1/2 Mile _____

*Refer to PA Table 10 for calculations on air pathway exposures

¹⁻¹¹ Refers to question number on PA pathway scoresheets

Potential Hazardous Waste Site Preliminary Assessment Form						Identification
						State:
						CERCLIS Discovery Date:
1. General Site Information						
Name: Whispering Winds Golf Course Outfall		Street Address: NA				
City: Cannon AFB		State: NM	Zip Code: 88103	County: Curry	Co. Code: 9	Cong. Dist: 3
Latitude: 34°24'10.22"	Longitude: 103°19'34.98"W	Approximate Area of Site: 125 Acres ____ Square Ft		Status of Site: <input checked="" type="checkbox"/> Active <input type="checkbox"/> Not Specified <input type="checkbox"/> Inactive <input type="checkbox"/> NA (GW plume, etc.)		
<p>Site Description: In approximately 2002, the installation golf course (officially known as Whispering Winds Golf Course) began receiving a portion of the treated effluent from the WWTP to fill ponds and irrigate the greens. The golf course is located northwest corner of Cannon AFB and occupies approximately 125 acres.</p> <p>Treated effluent from the WWTP is intermittently piped to a 190,000-gallon storage tank located on the eastern portion of the golf course. Effluent in the storage tank is then discharged to a lined pond in the north central portion of the golf course. Effluent from both the storage tank and pond is used for irrigation purposes throughout the golf course. According to the golf course supervisor, the golf course is irrigated five nights per week for approximately four hours per night using a sprinkler system. The sprinkler system has a maximum output of 900 gallons per minute.</p> <p>There is no accepted wastewater treatment process for AFFF. Any wastewater collected at the WWTP containing AFFF would be passed on to the golf course. As such, a release to the environment has occurred at the golf course.</p>						
2. Owner/Operator Information						
Owner: Cannon AFB			Operator: Same as "Owner"			
Street Address:			Street Address:			
City: Cannon AFB			City:			
State: NM	Zip Code: 88103	Telephone:	State:	Zip Code:	Telephone:	
Type of Ownership: <input type="checkbox"/> Private <input checked="" type="checkbox"/> Federal Agency Name: DOD <input type="checkbox"/> State <input type="checkbox"/> Indian			Type of Ownership: <input type="checkbox"/> Private <input type="checkbox"/> Federal Agency Name: _____ <input type="checkbox"/> County <input type="checkbox"/> Municipal <input type="checkbox"/> Not Specified <input type="checkbox"/> Other _____			
3. Site Evaluator Information						
Name of Evaluator: Ryan McVickers		Agency/Organization: HydroGeoLogic, Inc.			Date Prepared: 08/01/2015	
Street Address: 340 E. Palm Lane, Ste. A240			City: Phoenix		State: Arizona	
Name of EPA or State Agency Contact: NA			Street Address:			
City:		State:		Telephone:		

*C=Constituent, W=Wastestream, V=Volume, A=Area

7. Ground Water Pathway		
Is Ground Water Used for Drinking Within 4 Miles: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is There a Suspected Release to Ground Water ¹ : <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	List Secondary Target Population Served by Ground Water Withdrawn From: 0 - 1/4 Mile _____ >1/4 - 1/2 Mile _____ >1/2 - 1 Mile _____ >1 - 2 Mile _____ >2 - 3 Mile _____ >3 - 4 Mile _____ Total Within 4 Miles⁴ <u>6,540</u>
If Yes, Distance to nearest Drinking Well: <u>500</u> Feet	Have Primary Target Drinking Water Wells Been Identified: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If Yes, Enter Primary Target Population: <u>6,540</u> People ³
Type of Drinking Water Wells Within 4 Miles <input checked="" type="checkbox"/> Municipal <input type="checkbox"/> Private <input type="checkbox"/> None		
Depth to Shallowest Aquifer: _____ Feet	Nearest Designated Wellhead Protection Area ⁶ : <input type="checkbox"/> Underlies Site <input type="checkbox"/> >0-4 Miles <input checked="" type="checkbox"/> None Within 4 Miles	*Use population #s for PA Table 2 *Note nearest well for #5 on GW Pathway Scoresheet
8. Surface Water Pathway		
Type of Surface Water Draining Site and 15 Miles Downstream (check all that apply): <input type="checkbox"/> Stream <input type="checkbox"/> River <input type="checkbox"/> Pond <input type="checkbox"/> Lake <input type="checkbox"/> Bay <input type="checkbox"/> Ocean <input type="checkbox"/> Other _____	Shortest Overland Distance From Any Source to Surface Water: _____ Feet _____ Miles	
Is There a Suspected Release to Surface Water ¹ : <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Site is Located in: <input type="checkbox"/> Annual - 10 yr Floodplain <input type="checkbox"/> >10yr - 100yr Floodplain <input type="checkbox"/> >100yr - 500yr Floodplain <input type="checkbox"/> >500yr Floodplain	
Drinking Water Intake Located Along the Surface Water Migration Path: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	List All Secondary Target Drinking Water Intakes: <u>Name: Water Body: Flow (cfs): Population Served:</u> _____ _____ _____ _____ _____ Total within 15 Miles⁴ <u>NA</u>	
Have Primary Target Drinking Water Intakes Been Identified: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, Distance to Nearest Drinking Water Intake : _____ Miles ⁶		
If Yes, Enter Population Served by Target Intake: <u>NA</u> People ⁴		
Fisheries Located Along the Surface Water Migration Path: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, Distance to Nearest Fishery: _____ Miles	List All Secondary Target Fisheries ¹⁰ : <u>Water Body/ Fishery Name : Flow (cfs):</u> _____ _____ _____	
Have Primary Target Fisheries Been Identified: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		

8. Surface Water Pathway (continued)

<p>Wetlands Located Along the Surface Water Migration Path:</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	<p>Other Sensitive Environments Located Along the Surface Water Migration Path:</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, Distance to Nearest Sensitive Environment: _____ Miles</p>
<p>Have Primary Target Wetlands Been Identified:</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	<p>Have Primary Target Sensitive Environments Been Identified:</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
<p>List All Wetlands:</p> <p><u>Water Body :</u> <u>Flow (cfs) :</u> <u>Frontage miles:</u></p> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>	<p>List All Sensitive Environments¹¹:</p> <p><u>Water Body :</u> <u>Flow (cfs) :</u> <u>Sensitive Environment Type:</u></p> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>

9. Soil Exposure Pathway

<p>Are People Occupying Residence or Attending School or Daycare on or Within 200 Feet of Area of Known or Suspected Contamination:</p> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<p>Number of Workers Onsite⁴:</p> <input type="checkbox"/> None <input checked="" type="checkbox"/> 1 - 100 <input type="checkbox"/> 101 - 1,000 <input type="checkbox"/> > 1,000	<p>Have Terrestrial Sensitive Environments Been Identified on or Within 200 Feet of Areas of Known or Suspected Contamination:</p> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<p>If Yes, Enter Total Residential Population:</p> <hr style="width: 100px; margin-left: 0;"/> People²	<p>Population Within 1 Mile:</p> <hr style="width: 100px; margin-left: 0;"/> People⁷	<p>If Yes, List Each Terrestrial Sensitive Environment⁵:</p> <hr style="width: 100px; margin-left: 0;"/> <hr style="width: 100px; margin-left: 0;"/> <hr style="width: 100px; margin-left: 0;"/>

10. Air Pathway

<p>Is there a Suspected Release to Air¹:</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Enter Total Population on or Within:</p> <p>Onsite _____</p> <p>0-1/4 Mile _____</p> <p>>1/4-1/2 Mile _____</p> <p>>1/2-1 Mile _____</p> <p>>1-2 Miles _____</p> <p>>2-3 Miles _____</p> <p>>3-4 Miles _____</p> <p>Total Within 4 Miles ³⁻⁵ _____</p>	<p>Wetlands Located Within 4 Miles of the Site⁶:</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, How Many Acres: _____ Acres</p> <p>Other Sensitive Environments Located Within 4 Miles of the Site:</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>List All Sensitive Environments Within 1/2 Mile of the Site⁶:</p> <p>Distance: <u>Sensitive Environment Type/Wetlands Area (acres)</u>:</p> <p>Onsite _____</p> <p>0-1/4 Mile _____</p> <p>>1/4-1/2 Mile _____</p>
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¹⁻¹¹ Refers to question number on PA pathway scoresheets

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APPENDIX C
RECORDS OF COMMUNICATION

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	Date: 7/6/2015 Time: 1:00pm	COMMUNICATION RECORD
Name of Base, State: Cannon AFB, New Mexico		
Interviewer: Ryan McVickers		
Organization: HydroGeoLogic, Inc.		Phone: (602) 476-5303
Position/role on this project: Research Analyst		Email: rmcvickers@hgl.com
Interviewee: Brad Branfield		
Organization: 27 SOCES		
Position/Job Title: Service Contracts Supervisor		
How Long in this Postion? - 6 years		
How long at this Base in current and previous positions? – 6 years		
Have you held similar positions at other bases? – No		
Which bases?		
How long?		
Discussion:		

Mr. Branfield provided a tour of the wastewater treatment plant (WWTP). He is currently the Service Contracts Supervisor at Cannon AFB and represents contracted workers at the WWTP.

- Wastewater generated on Cannon AFB is transported through a series of mains and lift stations to the installation's WWTP. Floor drains installed at the fire stations and hangars are conveyed through the sanitary sewer system underground piping to the WWTP.
- The WWTP was constructed in 1998 and is designed to handle an average of 1.5 million gallons per day of inflow. The plant incorporates a digester tank to reduce solids, a series of aeration and clarification tanks, as well as ten sludge drying beds.
- WWTP staff can divert incoming wastewater to a 9 million-gallon storage basin for unsuitable material (such as AFFF) which bypasses the main treatment systems.
- Wastewater in the basin is then gradually sent to the treatment systems (sequencing batch reactors) for processing along with regular influent.
- Effluent from the WWTP is discharged to North Playa Lake and the golf course.

	Date: 7/6/2015 Time: 8:15am	COMMUNICATION RECORD
Name of Base, State: Cannon AFB, New Mexico		
Interviewer: Ryan McVickers		
Organization: HydroGeoLogic, Inc.		Phone: (602) 476-5303
Position/role on this project: Research Analyst		Email: rmcvickers@hgl.com
Interviewee: Charles Robertson		
Organization: Cannon AFB Fire Department		
Position/Job Title: Fire Inspector		
How Long in this Postion? 1998-2001; 2009-present		
How long at this Base in current and previous positions? 1998-2001; 2009-present		
Have you held similar positions at other bases?		
Which bases?		
How long?		
Discussion:		

Mr. Robertson stated that he is currently the Fire Inspector for Cannon AFB. According to Mr. Robertson, AFFF is currently used on-base in hangar fire suppression systems as well as in fire department trucks and trailers.

FTAs:

- No knowledge of any specific use of AFFF at FT-06. Unlikely since it was used prior to 1970.
- No knowledge of any specific use of AFFF at FT-07, but possible since it operated after 1970. There was no lining or other containment systems in place at FT-07.
- No knowledge of any specific use of AFFF at FT-08, but possible since it operated after 1970. There was no lining or other containment systems in place at FT-08.
- No knowledge of any specific use of AFFF at FTA-4, but possible since it operated after 1970. There was no lining or other containment systems in place at the original training pit at FTA-4.
- Currently, fire training is conducted approximately once per month at the active FTA using either water or AFFF. Vehicle foam checks are conducted annually at the FTA.
- The amount of AFFF used at the active FTA varies depending on the exercise or vehicle being tested. Typically, AFFF is sprayed from vehicles into the burn pit until there is a consistent spray pattern

Fire Department/Current & Former Fire Stations:

- Current and only fire station is Building 158, activated in 2005.
- The building was formerly a hangar that contained an AFFF system.
- The station does not have an oil-water separator (OWS).
- Mr. Robertson provided an inventory list of fire department equipment and AFFF capacities (see attached).
- Fire department conducts monthly equipment testing (using water), vehicle maintenance, and hose washouts on the concrete ramp in front of the fire station.
- Any release of AFFF on the concrete ramp would enter a storm drain near the fire station.
- Equipment is refilled with AFFF using a transfer pump in the fire station stalls.

- The stalls have floor drains on two sides which route to the sewer system.
- A bench stock supply of AFFF is stored at the fire station. Only 3% AFFF is used, typically from 3M or Ansul. An inventory is attached.
- Annual foam testing is conducted at the active fire training area, which began operations in 1997. Liquid discharged in the fire training pit is routed to a lined evaporation pond.
- Former fire station was equipped with an OWS.

Hangars

- Newly constructed hangars are equipped with high-expansion foam (HEF).
- Releases of AFFF enter floor drains/trenches or spill onto concrete ramps.
- Mr. Robertson, in conjunction with the Real Property office, completed the attached Hangar Inventory table.

	Date: 7/9/2015 Time: 8:30am	COMMUNICATION RECORD
Name of Base, State: Cannon AFB, New Mexico		
Interviewer: Ryan McVickers		
Organization: HydroGeoLogic, Inc.		Phone: (602) 476-5303
Position/role on this project: Research Analyst		Email: rmcvickers@hgl.com
Interviewee: Gene Smith		
Organization: 27SOCES/CEIEC		
Position/Job Title: Air Quality Specialist		
How Long in this Postion? - Unknown		
How long at this Base in current and previous positions? – Unknown		
Have you held similar positions at other bases? – No		
Which bases?		
How long?		
Discussion:		

Mr. Smith stated that he is currently the air quality specialist at Cannon AFB and has access to a database documenting several AFFF releases at hangars and other locations around the base. He provided a list of AFFF releases from 1994 to 2015 (attached).

Cannon AFB Hangar/Foam System Inventory

General Hangar Info.						Foam System Info.				HX Hangars Only	
Hangar No.	Year Built	Total Area (Square Ft.)	How many bays?	Current Occupant/Use	Floor trench?	Current Foam System Type	Year current foam system installed	Foam Tank(s) Capacity	Underwing or Overhead Foam System?	Wet-pipe sprinklers installed in bays?	If so, from what years did this hangar have an AFFF system?
109	1991	20,183	1	27 SO MXS	Yes	AFFF	1991	1400 gal	Underwing	Yes	-
119	1997	48,000	4	Whs-FSS,CE,SFS,LRS	Yes	AFFF	1997	500 gal	Underwing	Yes	-
125	1989	22,950	26	Special Tactics Sqdrn	Yes	AFFF	1989	2600 gal	Underwing	Yes	-
126	1990	22,950	26	Special Tactics Sqdrn	Yes	AFFF	1990	?	Underwing	Yes	-
133	1993	20,160	3	SNC	Yes	AFFF	1993	1000 gal	Underwing	Yes	-
173-temp			1	27 SOMXS	No	HX	-	See 179		Overhead	Yes
174-temp			1	Force Support Sqdrn Gym	No	HX	-	See 179		Overhead	Yes
179 (mech room)			-	-	HX			2x 450 gal	-	-	No
194	1969	Unknown	4	SNC	No	HX	2008?		Overhead	Yes	No
195			2	727 SOAMXS	No	HX	-		Overhead	Yes	No
196			2	727 SOAMXS	No	HX			Overhead	Yes	No
197	1990	16,650	2	727 SOAMXS	Yes	AFFF	1990	?	Underwing	Yes	-
199	1992	34,648	3	SOF CV-22 AMU	Yes	HX	1999	?		Yes	1992-1999
204	1993	17,295	2	SOF CV-22 AMU	Yes	AFFF	1993	800 gal	Underwing	Yes	-
208	1995	4,767	5	SOF CV-22 AMU	Yes	HX	Sept. 2013	?		Yes	1995-2013
4605	2012	1	27 SOAMXS	No	HX	2012			Overhead	Yes	No
4606	2013	4	27 SOAMXS	No	HX	2013			Overhead	Yes	No
4607	2013	4	27 SOAMXS	No	HX	2013			Overhead	Yes	No
4608	2014	1	27 SOAMXS	No	HX	2014			Overhead	Yes	No
4609	2014	1	27 SOAMXS	No	HX	2014			Overhead	Yes	No
4610	2014	1	27 SOAMXS	No	HX	2014			Overhead	Yes	No

DATE	LOCATION	MEDIA	SUBSTANCE	QUANTITY (gallons)	REPORTED BY	RQ	EIIB?	FOLLOW-UP COMPLETE?	COMMENTS	CAUSE	Clean-Up Info
6/29/1994	Fac 199	Concrete Soil	AFFF	50.0 gal	CEO J. Holland	Yes			Discharged to Storm Sewer outside of "Dock 2" No Record of report to NRC		
14-May-96	Fac 199	199	AFFF	12		None	No				
4-Jun-96	Fac 199		AFFF	200		None	No				
17-Jun-96	Fac 208		AFFF	Unk		None	No				
25-Jun-96	Fac 208		AFFF	3		None	No				
2/7/1997	Hangar 126	Asphalt	AFFF	10 gal.	429 ECS	None	No	Yes	Memo to CEV		
4/7/1997	199	Soil/Water	AFFF	75 Gals (est)	CEF via CE SCS	No	No	YES	Released AFFF mixture was washed into the floor drain/OWS/Sanitary Sewer and the charged lines were drained into the Sanitary Sewer. Vehicle (P-19) Malfunction resulted	Manual alarm shorted when sprayed with water. Facility/occupants were washing walls with a hose. Alarm activated AFFF system when it was shorted. CET op test on me	
18-Jun-97	133	Concrete	AFFF	1.5 gal	CEF	No	No	Yes	AFFF contained inside Bldg Discharged to San. Sewer	False Fire Sys Activation	
3/3/1998	Hangar 208	Concrete/ Wastewater	AFFF	< 5 gal	CEF	No	No	Yes			
6/25/1998	Hangar 208	Concrete/ WWTP	AFFF	Possibly 1000 gals of concentrate	CEOL1	NO	??	NO	Leak from flange on end of 1200 gal tank May have been leaking 48 hours or more. Conc AFFF discharged to WWTP. In PM a valve gasket blew and released more concentrate? Discharged to san sewer and ramp.	Two releases. Leak from storage tank in AM. System leak in PM BOD5 on 5/26 = 49 mg/L	
7/30/1998	Fac 208	San. Sewer	AFFF	20 Gal	CES	NO	NO	Yes	Discharged during bladder replacement on AFFF tank	Acc. Release	

DATE	LOCATION	MEDIA	SUBSTANCE	QUANTITY (gallons)	REPORTED BY	RQ	EIIB?	FOLLOW-UP COMPLETE?	COMMENTS	CAUSE	Clean-Up Info
12/4/1998		Concrete/ WWTP	AFFF		CEO	No	No	YES	Accidental Release in mech room	Operator Error	
	208								WWTP notified after foam had reached there. QTY est requested from CCOLI.	Office fire activated AFFF system.	
24-Dec-99	Hanger 109	Asphalt	AFFF	500 gal.	CEF	No	No	No	Discharge was from one underwing nozzle in center of hanger bay.	Fire alarm activation caused partial discharge of AFFF system.	
28-Nov-00	Hanger 126	Concrete	AFFF	30 Gals		No	No		Contents of fire suppression system (including some AFFF residual) was flushed onto hangar floor and onto the fire system.	Uncontrolled release from scheduled rinsing of fire system.	
7-Dec-00	Hanger 133	Concrete, soil, and Storm Drain	AFFF & water	several hundred gallons, mostly water	CEO/L	No	No		CE Plumbbers were in the process of testing/draining the system lines when a valve under pressure (175 lbers.) broke the side out of a steel valve.	Ruptured fire suppression valve.	
14-Dec-00	Hanger 197	Concrete & Storm Drain	AFFF & Water	unknown	CEO/ Sgt Hewitt	No	No	Yes	J Rezman reported this to EPA (and NMED) because more than a "trace amount" reached the N. Plays (waters of the US). CEF used booms to keep out of storm sewer. There was as discharge to the WWTP via floor drains.	Discharged following power outage/surge.	
18 Jul 2001	Hanger 133	soil and WWTP	AFFF	200 gals	CEF	Yes	No		Bldg heater came on, mills/birds/nests in heater caught fire, flame caused fire system to activate.	Release occurred at approx 0400. CEO estimated that 700 gals of AFFF discharged from 800 gal capacity tank.	
5/2/2002	Hanger 204	Concrete	AFFF	UNK	CEO/T. Thompson	No	No	Yes	A "60" (Power Gen) was started while in/hear the hangar. This caused the fire system to activate.	AFFF evaporated on concrete ramp.	
9/7/2002	Hgr 125	Concrete	AFFF & Water	3300 (Water) 110 gal AFFF	CEF	No	No	Yes	It appears that the drain valves did not activate to close the drains.	AFFF went down sanitary drain and/or evaporated on the ramp.	

DATE	LOCATION	MEDIA	SUBSTANCE	QUANTITY (gallons)	REPORTED BY	RQ	EIB?	FOLLOW-UP COMPLETE?	COMMENTS	CAUSE	Clean-Up Info
2/4/2003	Hanger 199	Concrete/Soil	AFFF/Water	3 Gallons (AFFF)	CEO/Richter	None	No		Question: Why was system only 10% charged? Partial discharge of tire system into hangar bay from two wing level nozzles. Plumbers responded. Told CEF that "some" went into drain. WWTP and CEIC not notified by plumbers.	Fire Alarm Pull box accidentally activated	Water with AFFF discharged to ramp and some to Storm drain via Mech room.
8 Apr 05 (approx 0345)	Hanger 197	Concrete + Drain	Possible AFFF	Unk	CEF	N/A	No			Unknown	None Required. No foam observed in WWTP wet well or N Playa Lake. CES Plumbers drained lines and reset system.
9/26/2006	H119	Asphalt; Dirt drainage ditch, S Playa Lake	AFFF	60 gals (est)	CEF	None	No		AFFF entered storm drains and the South Playa Lake. Not reportable because no RQ exceeded. There is no activation undetermined. Could be a corroded valve. CES Plumbers tested the system with water and a small amount of water in the South Playa Lake.	Cause of fire system activation undetermined. Could be a corroded valve. CES Plumbers tested the system with water and a small amount of water in the South Playa Lake.	AFFF was discharged via the concrete storm pipe into a soil ditch and a small amount of water in the South Playa Lake.
8/3/2009	Hgr 109	Steel Tank	AFFF	300 gals	USACE/K Wylie	no	no		Not Reportable as SW NPDES does not prohibit foam discharge to this surface water.	Not Reportable as SW NPDES does not prohibit foam discharge to this surface water.	
9/13/2012	Hgr 119	Asphalt & Concrete	AFFF	Unknown (a lot)	CEF	No	No		Contractor doing work on Fire Suppression System discovered that bladder inside tank was leaking. Six drums of AFFF was removed from the tank. No release to environment.	Contractor will dispose? Disposal	Contractor will dispose? Disposal
7/22/2013	Hgr 119	Concrete	AFFF	Unk	CEF/Scheib	No	No		CEIE was notified by Fire Dept. H119 has floor trenches sealed e.g. no path to WWTP.	CEIE foam allowed to evaporate.	N/A

AFFF Releases - Cannon AFB - 1994 to 2015

DATE	LOCATION	MEDIA	SUBSTANCE	QUANTITY (gallons)	REPORTED BY	RQ	EIIB?	FOLLOW-UP COMPLETE?	COMMENTS	CAUSE	Clean-Up Info
											Foam allowed to evap
9-Dec-13	Hgr 195	Concrete	AFFF		CEC	Unk	N/A	No	Yes	No discharge to WWTP of waters	System activated while Bldg heaters being repaired

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	Date: N/A Time: N/A	COMMUNICATION RECORD
Name of Base, State: Cannon AFB, New Mexico		
Interviewer: Ryan McVickers		
Organization: HydroGeoLogic, Inc.		Phone: (602) 476-5303
Position/role on this project: Research Analyst		Email: rmcvickers@hgl.com
Interviewee: John Rebman		
Organization: 27 SOCES/CEAN		
Position/Job Title: Water Quality Manager		
How Long in this Postion? Unknown		
How long at this Base in current and previous positions? Unknown		
Have you held similar positions at other bases? Unknown		
Which bases?		
How long?		
Discussion:		

Mr. Rebman provided information via email. He is currently the Water Quality Manager at Cannon AFB.

- Provided Operating Instruction 32-11 regarding Hangar Firefighting Foam Activations (attached).
- Provided various internal emails and correspondence regarding hangar foam systems and releases of AFFF.

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**DEPARTMENT OF THE AIR FORCE
27TH SPECIAL OPERATIONS
CIVIL ENGINEER SQUADRON (AFSOC)**

**CE OPERATING INSTRUCTION 32-11
01 February 2014**

Civil Engineering

HANGAR FIREFIGHTING FOAM ACTIVATIONS



COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

OPR: 27 SOCES/CEIEC (Mr. John Rebman)

Certified by: 27 SOCES/CC

(Lt Col Anthony Figiera)

Pages: 7

HANGAR FIREFIGHTING FOAM ACTIVATIONS

1. PURPOSE: To establish policy and guidance associated with the release of Aqueous Film Forming Foam (AFFF) and high expansion (HX) foam under the following scenarios: (1) testing and/or purging, (2) actual firefighting and (3) accidental release. This Operating Instruction (OI) addresses environmental concerns and ramifications, if any, with foam releases and provides guidance to minimize or eliminate environmental consequences.

2. SCOPE: The OI applies to both military and civilian personnel assigned to the following flights: Installation Management (Environmental Element, CEIEC), Operations (CEO), Fire Emergency Services (CEF) and Programs (CEN).

3. RESPONSIBILITY: All personnel are responsible directly to their flight commanders for the enforcement of this OI. CEIEC will have overall responsibility for ensuring the aforementioned scenarios do not cause environmental harm and maintaining names and phone numbers on the attached checklist current.

4. GENERAL:

a. Generally, only storm water can enter the storm sewer drainage system, however, water associated with firefighting activities is authorized to enter storm drain inlets.

b. Numerous storm drain inlets between Hangar 133 and the Fire Station (B158) convey storm water directly to the South Playa Lake. Although this lake is not regulated under the federal Clean Water Act, efforts should be made to keep foam from reaching these inlets. Inlets of concern west of Runway 04/22 are primarily located between Chindit Blvd and the flight line access road. Storm water northeast of the Fire Station enters several storm drain inlets and eventually transported east of Raptor Road. The majority of storm water near hangars and other facilities along the C-130 flight line (Southeast Development Area) drain to a man-made retention pond.

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c. AFFF and HX foam entering the sanitary sewer system can upset the biological treatment process of the Cannon AFB wastewater treatment plant (WWTP) due to its foaming characteristics. This may lead to water quality violations. The Cannon AFB wastewater National Pollutant Discharge Elimination System (NPDES) permit, issued by the US Environmental Protection Agency (EPA), established water quality limits. Of greater concern, foam may be discharged to the base's two permitted outfalls; thus, violating this permit. Firefighting foam is essentially soap, and if not controlled, tends to regenerate (foam up) throughout the treatment process. Foam may also inhibit normal solids settling within the WWTP sequencing batch reactor (SBR) treatment basins; eventually resulting in excessive solids being discharged in the effluent.

d. The WWTP operations and maintenance (O&M) contractor can control or totally eliminate foam through use of a defoaming agent. However, past events undermine the effectiveness of this agent. Despite this, it should be used if foam enters the SBR basins.

e. Wastewater can be diverted to a 9 million gallon (MG) raw wastewater storage basin prior to entering the SBR basins if the O&M contractor is aware of the foam system activation. Should this occur during normal duty hours, CEF and/or CEO must immediately contact CEIEC (notification requirement is identified on CEF's checklist located in the Fire Alarm Control Center). In turn, CEIEC will notify the O&M contractor so that flow can be diverted to the storage basin.

f. Water, or a mixture of foam and water, may be released from mechanical rooms during foam activations or tests; however, storm drain inlets should be blocked (See Section 8) if there is a possibility of the mixture reaching inlets. For example, foam and water from test headers during pressure testing will discharge outside some mechanical rooms. Plain water may be released without blocking nearby storm drain inlets. In addition, mechanical room floor drains should be blocked if the foam system is repaired or bladders containing concentrate are replaced.

g. The following hangars either have their floor trenches filled with concrete or were constructed without floor trenches (water within hangars equipped with trenches discharge to the sanitary sewer system): 173, 174, 194, 195, 196, 4605, 4606, 4607 and 4609. Foam from these hangars does not enter the sanitary sewer system, but it is recommended that nearby storm drain inlets and sewer manholes be blocked, if foam can reach a storm drain inlet or enter a sanitary sewer manhole.

h. All hangars except those listed above are equipped with a valve that automatically closes when the fire suppression system is activated in order to keep foam from entering the sanitary sewer system. Valves can be manually opened to allow accumulated foam and water to enter the sanitary sewer system. Following each activation or system check, CEO should verify that these valves will work properly should an activation occur. Valves, which do not close at system activation, must be repaired as soon as practical.

5. POLICY:

- a. Generally, AFFF/HX foam should be kept out of storm drain inlets and must not enter the sanitary sewer system. Keeping foam from reaching storm drain inlets is not critically important at some facilities (see Section 8) as storm water will not reach wetlands.
- b. During normal duty hours, the Water Quality Program Manager, CEIEC (784-1099), is the primary point of contact. If that individual is unavailable, contact the Environmental Element Chief, CEI, at 784-6374.
- c. The 27 SOCES flight responsible for the AFFF/HX foam system test or purging operation (e.g., CEN, CEO) should contact the Water Quality Program Manager at least three workdays prior to the event.
- d. As a general rule, the Water Quality Program Manager should be contacted for planned and unplanned foam system activations. If this person is unavailable or the Environmental Element Chief cannot be contacted at the phone numbers in Section 5.b., dial 760-0337 (CEIEC flight cell phone). If none of these numbers reach a CEIE member, contact the O&M contractor using the following phone numbers:
 - (1) WWTP (99-784-3990): 0600-1630 (Monday-Friday) and 0600-1000 (Saturday, Sunday and federal holidays).
 - (2) WWTP cell phone numbers: 749-0742 or 749-0202 at all other times or if the WWTP cannot be reached.

6. AFFF/HX FOAM SYSTEM CHECKS (MAINTENANCE, TESTING, OR PURGING) GUIDANCE:

- a. CEO (Task 1) and CEN (Task 2) of attached checklist.
- b. When working on AFFF/HX foam bladders or piping within mechanical rooms, covering floor drains is strongly recommended to limit the possibility of foam entering the sanitary sewer system. Sanitary sewer manholes near the activated facility should also be protected from foam encroachment. Contact the Water Quality Program Manager if foam is discharged into the floor drain or a sanitary sewer manhole.
- c. Contact the Water Quality Program Manager at least five workdays in advance of full-scale testing (typically required every three years) of the entire foam system and the morning of the test. Notification will ensure the O&M contractor is prepared to divert flow to the 9 MG raw wastewater storage basin, if warranted.
- d. Contracts requiring AFFF/HX foam system checks or activations must include specification language requiring the contractor to block storm drain inlets, sanitary sewer manholes, drainage ditches, etc. Guidance outlined in the attached checklist should be followed to the extent possible.

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e. CEO personnel periodically purge AFFF riser and under wing pipes in order to rid the lines of residual AFFF. Purged solution should be directed to a vegetated area, or on pavement that does not drain towards storm drain inlets and sanitary sewer manholes. However, purged water may be directed to the storm sewer system after CEO personnel verify that AFFF solution is not being released.

f. Foam and water mixtures that enter hangar floor trenches should be pumped out onto aircraft parking ramps. Trench pumping must consider mission constraints (pumping may unreasonably delay bringing the facility back into service). If this is the case, the mixture may be released to the sanitary sewer system (contact the Water Quality Program Manager if this occurs).

7. AFFF/HX FOAM SYSTEM ACTIVATION GUIDANCE DUE TO FIREFIGHTING ACTIVITIES:

a. CEF (Task 3, Items a. and b.) and CEO (Task 3, Items c. and d.) of attached checklist.

b. Storm water releases due to firefighting activities to the storm sewer system are authorized; therefore, no environmental concerns or limitations apply.

c. As system activations may cause foam to be released to the sanitary sewer system (via hangar floor trenches, mechanical room floor drains, or sanitary sewer manholes in the path of the foam), the O&M contractor should be contacted in order to prepare for the incoming foam.

8. DECISION MATRIX: Use the following matrix to determine AFFF/HX foam disposition:

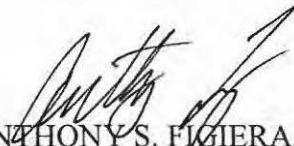
Hangar	Foam Type	Discharge Allowed on Ramp	Keep Out of Storm Drains	When Pumping Out Floor Trenches Onto Ramp		Keep Out of Sanitary Sewer Mission Permitting
				Block Storm Drains	No Need to Storm Block Drains	
109	AFFF	X	X	X		X
119	AFFF	X	X	X		X
133	AFFF	X	X	X		X
173	HX Foam	X			X	X
174	HX Foam	X			X	X
194	HX Foam	X			X	X
195	HX Foam	X			X	X
196	HX Foam	X			X	X
197	AFFF	X			X	X
199	HX Foam	X			X	X
204	AFFF	X			X	X
208	HX Foam	X			X	X
4605	HX Foam	X			X	X
4606	HX Foam	X			X	X
4607	HX Foam	X			X	X
4608	HX Foam	X			X	X
4609	HX Foam	X			X	X

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Note: Facility 4608, C-130 Wash Rack, is currently under construction. It is the only facility either completed or under construction in the SE Development Area with a floor trench.

9. CHECKLIST: The attached checklist should be used when AFFF/HX foam system activations: (1) occur due to testing/purging, (2) may result due to system maintenance, or (3) occurred as a result of firefighting activities. Tasks 1 and 2 (see checklist) assumes CEO and contract activities will start during the Water Quality Program Manager's duty-hours (Monday-Friday, 0700-1600). This would allow the Water Qulaity Program Manager to contact the O&M contractor when there is a possibility of foam entering the sanitary sewer system. (Note: Task 3 accounts for this possibility, as system activation as a result of firefighting are more likely during non-duty hours.)

10. CONCLUSION: Generally, foam should be kept out of the storm and wastewater sewer systems. NPDES storm water permit violations may result if foam enters the SBR basins; at the very least, water quality will be degraded.



ANTHONY S. FIGIERA, Lt Col, USAF
Commander, 27 SOCES

HANGAR FIREFIGHTING FOAM ACTIVATIONS CHECKLIST
(Reference OI Paragraph 9, Checklist)

TASK	YES	NO
1. CEO AFFF/HX Foam System Check (Maintenance, Testing, or Purging):		
a. For other than full-scale testing (required every 3 years), has Water Quality Program Manager (784-1099) been contacted at least 3 workdays prior to maintenance, testing, or purging? (Critical for all facilities)		
b. Can mechanical room floor drain be covered or plugged? If not, contact the Water Quality Program Manager (784-1099). (Critical for all facilities)		
c. If located near the mechanical room or hangar doors, are sanitary sewer manholes protected to keep foam out? (Critical for all facilities)		
d. For facilities 109, 119, 125, 126 and 133: If mechanical room water line (that is connected to AFFF system) discharges as a normal consequence of maintenance, testing, or purging, has discharge hose been directed to a vegetated/xeriscaped area? (Critical for named facilities unless foam is not mixed with water)		
e. For full-scale AFFF/HX foam testing:		
1. Has Water Quality Program Manager (784-1099) been contacted at least 5 days in advance? (Critical)		
2. Has Water Quality Program Manager (784-1099) been contacted on morning of test? (Critical)		
f. For AFFF riser pipe/under wing nozzle purging:		
1. For facilities 109, 119, 125, 126 and 133: Is discharge hose directed such that purged solution, that contains foam, discharges away from storm drain inlets? (Critical for named facilities)		
2. For facilities 109, 119, 125, 126 and 133: Is discharge hose directed such that purged solution, that contains foam, discharges away from sanitary sewer manholes? (Critical for named facilities)		
g. For facilities with floor trenches in which mission requirements allow trench contents to be pumped onto the ramp:		
1. Have storm drain inlets been blocked? (Critical for facilities 109, 119, 125, 126 and 133; optional for all other facilities with floor trenches)		
2. Have sanitary sewer manholes been protected from foam encroachment? (Critical for all facilities with floor trenches)		
h. Has the Water Quality Program Manager (784-1099) been notified if mission constraints do not allow trench contents to be pumped onto the ramp? (Critical for all facilities with floor trenches)		

TASK	YES	NO
2. Contract AFFF/HX Foam System Check, Including Maintenance and Testing:		
a. For other than full-scale testing (required every 3 years), has the Water Quality Program manager (784-1099) been contacted at least 3 workdays prior to maintenance and/or testing? (Critical for all facilities)		
b. Can mechanical room floor drain be covered or plugged? If not contact the Water Quality Program Manager (784-1099). (Critical for all facilities)		
c. If located near the mechanical room or hangar doors, are sanitary sewer manholes protected to keep foam out? (Critical for all facilities)		
d. For facilities 109, 119, 125, 126 and 133: If mechanical room water line (that is connected to AFFF system) discharges as a normal consequence of maintenance and/or testing, has discharge hose been directed to a vegetated/xeriscaped area? (Critical for named facilities unless foam is not mixed with water)		
e. For full-scale AFFF/HX foam testing:		
1. Has the Water Quality Program Manager (784-1099) been contacted at least 5 days in advance? (Critical)		
2. Has the Water Quality Program Manager (784-1099) been contacted on morning of test? (Critical)		
f. For facilities with floor trenches in which mission requirements allow trench contents to be pumped onto the ramp:		
1. Have storm drain inlets been blocked? (Critical for facilities 109, 119, 125, 126, and 133; optional for other facilities with floor trenches)		
2. Have sanitary sewer manholes been protected from foam encroachment? (Critical for all facilities with floor trenches)		
g. Has the Water Quality Program Manager (784-1099) been notified if mission constraints do not allow trench contents to be pumped onto the ramp? (Critical for all facilities with floor trenches)		
3. AFFF Activation Due to Firefighting Activities:		
a. If after WWTP duty-hours, were the treatment plant operators immediately contacted? (Critical)		
b. For facilities 109, 119, 125, 126 and 133: If firefighting activities permit, can storm drains be blocked to keep AFFF out? (Optional)		
c. For facilities with floor trenches in which mission requirements allow trench contents to be pumped onto the ramp (after rendered safe):		
1. Have storm drain inlets been blocked? (Critical for facilities 109, 119, 125, 126 and 133; optional for all other facilities with floor trenches)		
2. Have sanitary sewer manholes been protected from foam encroachment? (Critical for all facilities with floor trenches)		
d. For facilities which mission constraints do not allow trench content to be pumped onto the ramp: Has the Water Quality Program Manager (784-1099) been notified? (Critical for all facilities with floor trenches)		

	Date: 7/9/2015 Time: 9:00am	COMMUNICATION RECORD
Name of Base, State: Cannon AFB, New Mexico		
Interviewer: Ryan McVickers		
Organization: HydroGeoLogic, Inc.		Phone: (602) 476-5303
Position/role on this project: Research Analyst		Email: rmcvickers@hgl.com
Interviewee: Mel Crossan		
Organization: Whispering Winds Golf Course Phone: Unknown		
Position/Job Title: Grounds Supervisor		Email: Unknown
How Long in this Postion? - Unknown		
How long at this Base in current and previous positions? – Unknown		
Have you held similar positions at other bases? – No		
Which bases?		
How long?		
Discussion:		

Mr. Crossan stated that the golf course began receiving treated effluent from the wastewater treatment plant in approximately 2002 to fill ponds and irrigate the greens. Effluent from the WWTP is intermittently pumped to a 190,000 gallon tank on the eastern portion of the golf course and then discharged to a lined pond. The golf course is irrigated five nights per week, four hours per night with a sprinkler system (output of 900 gallons per minute).

	Date: 7/7/2015 Time: 9:00am	COMMUNICATION RECORD
Name of Base, State: Cannon AFB, New Mexico		
Interviewer: Ryan McVickers		
Organization: HydroGeoLogic, Inc.		Phone: (602) 476-5303
Position/role on this project: Research Analyst		Email: rmcvickers@hgl.com
Interviewee: Staff Sgt. Michael Reep		
Organization: Cannon AFB Water & Fuel Systems Maintenance Phone:		
Position/Job Title: Fire Suppression Manager		Email:
How Long in this Postion? - 3 years		
How long at this Base in current and previous positions? – 3 years		
Have you held similar positions at other bases? – No		
Which bases?		
How long?		
Discussion:		

Staff Sgt. Reep provided a tour of several hangars that are presently equipped with AFFF or HEF systems:

- Hangar 109
- Hangar 119
- Hangar 125
- Hangar 126
- Hangar 133
 - AFFF underwing cannons, one rack on each side of bay
- Hangar 173
 - Receives HEF from mechanical building 179
- Hangar 174
 - Receives HEF from mechanical building 179
- Hangar 194
 - Currently HEF; previously AFFF
- Hangar 197
 - Currently HEF; previously AFFF
- Hangar 204

Staff Sgt. Reep stated that all AFFF systems are manually activated via a pull station in each hangar bay. Floor trenches in the hangar bays connect to the sanitary sewer system and eventually route to the wastewater treatment plant. Storm drains on the ramps outside of hangars route directly to South Playa Lake.

Hangar AFFF systems are tested every two years using approximately one gallon of AFFF concentrate.

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